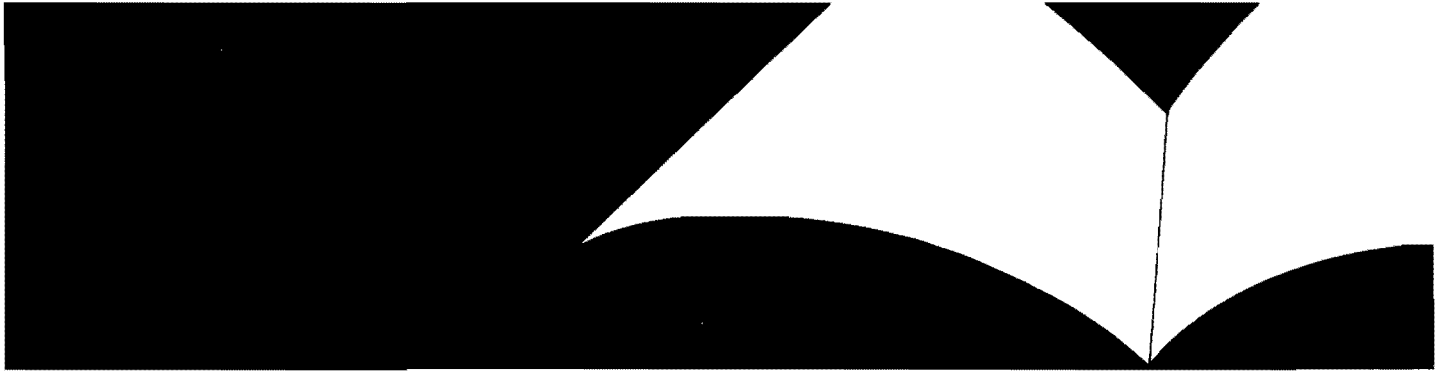


BUDGET
ISSUE PAPER



**The Costs of
Defense Manpower:
Issues for 1977**

January
1977



Congressional Budget Office
Congress of the United States
Washington, D.C.

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THE COSTS OF DEFENSE MANPOWER:
ISSUES FOR 1977

The Congress of the United States
Congressional Budget Office

PREFACE

As the Congress makes decisions on budget targets for the First Concurrent Resolution on the Budget for Fiscal Year 1978, the appropriate size of the defense budget will be one of the most important issues. Pay for active-duty and retired military personnel and for civilian white- and blue-collar workers absorbs well over half of the defense budget. These manpower costs have risen sharply over the last ten years. How to control future cost growth while meeting defense manpower needs is the focus of this paper.

The paper was prepared by Gary R. Nelson, Robert F. Hale, and Andrew Hamilton of the National Security and International Affairs Division of the Congressional Budget Office, under the supervision of Robert B. Pirie, Jr. and John E. Koehler. The authors wish to acknowledge the assistance of the CBO Budget Analysis Division for costing help; David R. Martin and Mary Tietz for research assistance; and Nancy J. Swope, Linda S. Moll, and Patricia J. Minton for typing and other assistance. John F. Burby helped prepare and edit the final draft.

In keeping with CBO's mandate to provide nonpartisan analysis of policy options, the report contains no recommendations.

Alice M. Rivlin
Director

January 1977

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SUMMARY

As the nation's largest employer, the Department of Defense in fiscal year 1977 will pay \$53 billion to more than 4.0 million active, reserve, and retired military personnel, and to 1.0 million civilian employees.

Defense payrolls have risen sharply in recent years, not only because of rapid inflation and the end of the draft, but also because of costly manpower policies. If these policies are continued--especially if the Department of Defense continues to seek large numbers of high-quality recruits from a declining population of young males--manpower costs will probably continue a rapid growth. Growth could be particularly rapid if declining national unemployment rates provide more jobs for young men than are currently available.

By fiscal year 1985, costs could be as much as \$8 billion more than they are today, even if there is no inflation and no increase in military forces. Such large cost increases may threaten the viability of the all-volunteer force.

However, systematic changes in defense manpower policies can avoid these cost increases and sustain the all-volunteer force. In fact, costs can be reduced below today's levels by as much as \$500 million in fiscal year 1978 and by a total of \$6.1 billion over the next five years without reducing military forces or readiness. (All savings are expressed in fiscal year 1977 dollars.)

Avoiding cost increases and achieving savings require changes in the management of defense manpower, particularly in recruiting, training, and turnover, as well as reform of military and civilian compensation laws to improve efficiency and equity. The close relationship among the determinants of manpower costs suggests a package of changes rather than piecemeal modification. The following table estimates savings that can be made in manpower costs without affecting force levels or readiness.

DEFENSE MANPOWER COSTS IN BILLIONS OF FISCAL YEAR 1977 DOLLARS

	1978	1979	1982	1985	Total for 1978-1982
High-Option Manpower Costs	53.1	53.2	{ 54.2 to 56.6	{ 55.5 to 61.3	{ 267.8 to 272.7
Cost Increases Avoided by Changed Recruiting Practices	-0.2	-0.3	{ -1.3 to -3.7	{ -2.6 to -8.4	{ -3.3 to -8.2
Costs (+) and Savings (-) Resulting from:					
Training efficiencies	-0.3	-0.3	-0.3	-0.3	-1.4
Reduced enlisted turnover	-0.2	-0.3	-0.2	-0.2	-1.2
Retirement reform	+0.1	0	-0.2	-0.6	-0.2
Salary system (net savings)	+0.1	-0.2	-0.4	-0.4	-1.2
Blue-collar pay reform	-0.1	-0.3	-0.5	-0.5	-1.7
White-collar changes	-0.1	-0.1	-0.1	-0.1	-0.4
Total cost changes	-0.5	-1.2	-1.7	-2.1	-6.1
Low-Option Manpower Costs	52.4	51.7	51.2	50.8	258.4

"High-option" costs assume that recruiting falls short of currently planned goals and that shortages are met with higher pay and more recruiters. Otherwise, the high option assumes that there are no other changes in the compensation system (i.e., fiscal year 1977 pay rates), that personnel turnover is not reduced, and that military support operations do not become more efficient. Under the high option, manpower costs will grow to between \$55.5 billion and \$61.3 billion by fiscal year 1985. At that level, manpower costs would exceed today's costs by \$3.3 billion to \$8.2 billion per year. But changes in recruiting policies alone can avoid these increases. Furthermore, savings from changes in training and personnel turnover practices, reforms in military pay and retirement, and changes in civil service pay and policies would reduce costs by \$500 million in fiscal year 1978 and a total of \$6.1 billion over the next five fiscal years.

Some of these policy changes are complicated. All may provoke controversy. The paper specifies the changes and notes the arguments for and against them.

Military Personnel Management

The Defense Department does not hire personnel trained for its unique missions directly from the open market. Instead, the Department recruits and trains personnel in a "closed" system. Thus, nearly 20 percent of all uniformed personnel are engaged in training and recruiting activities that cost \$7 billion in fiscal year 1977. Since 1974, the Defense Department has reduced the proportion of military personnel in overhead positions. This paper addresses three areas where further overhead reductions can be achieved without cutting numbers of forces: training, turnover, and recruiting.

Training Efficiency. In fiscal year 1977, basic military and advanced skill training for new enlisted recruits will cost nearly \$3 billion. CBO analysis suggests that these entry-level training costs can be cut by about 10 percent in the first few years (and more in the long run) through more efficient use of trainee time and staff. Training reductions could save \$250 million in fiscal year 1978 and a total of about \$1.4 billion over the next five years.

The minimum length of entry-level training for most recruits is set by law; the Congress recently reduced the minimum from four to three months. With improvements in entry-level training techniques, some integration of some training phases, and better management of time during the training process, the services could shorten entry-level training and take advantage of the change in the law. Savings averaging 20 percent are feasible in Army entry-level training time, as are smaller cuts in Navy and Air Force training. In combination, these reductions will save more than \$200 million per year.

The Army spends 50 percent to 130 percent more per week to train a recruit than the other services. Reductions in Army training staff and support, in addition to those associated with shorter training cycles, would bring the Army more in line with the other services. The reduction would save \$50 million a year.

Savings result from fewer military and civilian personnel in the training establishment. These options do not assume consolidation of training into fewer bases, but such actions could well increase the magnitude of savings.

TRAINING EFFICIENCY SAVINGS (-) IN MILLIONS OF
FISCAL YEAR 1977 DOLLARS

	1978	1979	1982	1985	Total for 1978-1982
Shorten Entry- Level Training	-200	-225	-225	-225	-1,100
Reduce Army Training Manpower	-50	-50	-50	-50	-250

Reduced Military Turnover. Between fiscal years 1978 and 1982, the rate of turnover among military personnel will be 23 percent rather than the 15 percent that was predicted in advance of a shift to all-volunteer forces. High turnover rates cut both ways: they lead to higher recruiting and training costs, but they produce smaller numbers of more expensive senior personnel and reduce retirement costs.

The present high turnover rate results from large losses among first-term personnel and from controls placed by the services on reenlistments.

Procedures adopted in fiscal year 1974 to expedite discharges of "marginal performers" also increased the percentage of recruits who fail to complete their first terms of enlistment from 25 to 37 percent. The Defense Department has set, but not enforced, goals for reducing first-term discharges that would still permit high discharge rates for persons in training. Meeting those goals would cut costs by \$80 million in fiscal year 1978 and by \$400 million over the next five years. A return to even lower pre-1974 loss rates would save \$160 million in fiscal year 1978 and \$800 million over the next five years. Loss rates prior to fiscal year

1974 policy changes were also higher because of the turbulence resulting from sharp cuts in forces at the end of the Vietnam War. However, a return to pre-1974 loss rates would clearly restrict the services' flexibility in discharging first-term personnel.

Higher reenlistment rates also can reduce turnover and costs by reducing the complement of untrained personnel and increasing productivity levels among military personnel. CBO estimates that an increase of 20,000 per year in reenlistments, including civilians with prior military service, is feasible and would produce net savings of \$100 million in fiscal year 1978 and \$510 million over the next five years, largely through reductions in untrained personnel. In order to benefit fully from higher reenlistment rates, changes must be made in the military retirement system.

REDUCED TURNOVER SAVINGS (-) IN MILLIONS OF
FISCAL YEAR 1977 DOLLARS

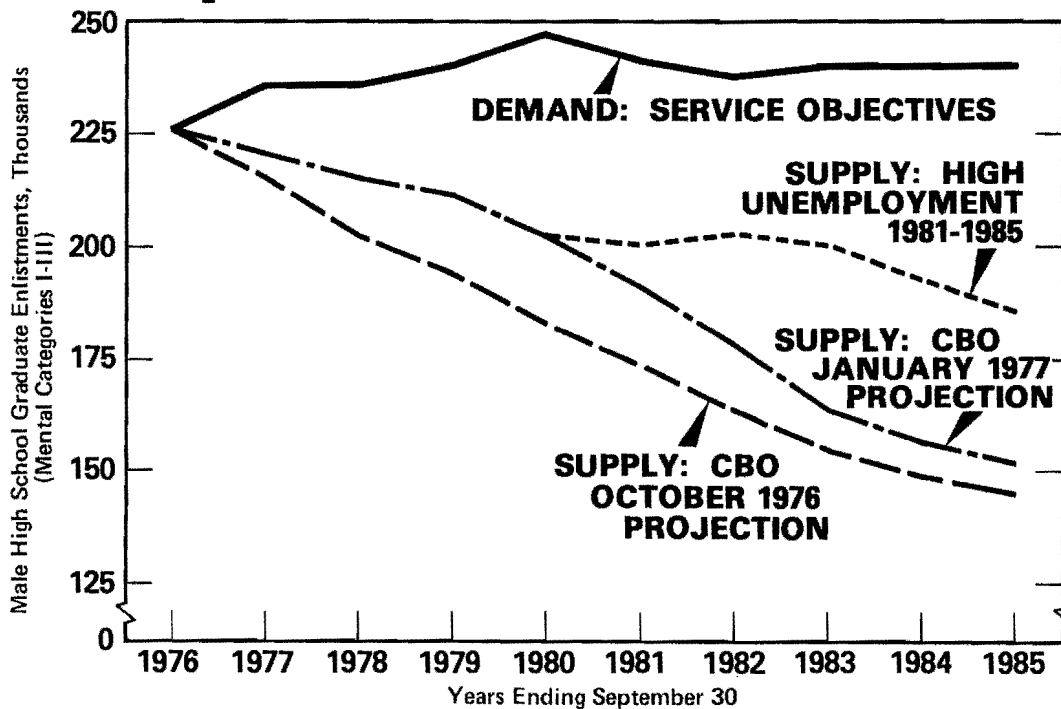
	1978	1979	1982	1985	Total for 1978-1982
Reduced First- Term Attrition					
OSD proposal	-80	-80	-80	-80	-400
Pre-1974 rates	-160	-160	-160	-160	-800
Increased Reenlistments	-100	-110	-90	-30	-510

Military Recruiting

The services are seeking higher standards of education and mental aptitude among recruits. This policy increases the demand for the very type of recruit who already is in short supply and who will be even more scarce after 1980 because of declining birth rates in the 1960s. Projected increases in civilian job opportunities and rising civilian pay scales would force the services to compete even harder for recruits. The trends are shown in the figure on the following page.

Projected Demand and Supply for Prime Recruiting Candidates, 1976-1985

Total Department of Defense



The top line shows demand for high-quality recruits. The descending lines show estimates of supply of recruits under various assumptions about future unemployment rates. Even in the case of high unemployment, demand exceeds supply of recruits in fiscal year 1985 by about 53,000. Assuming low unemployment rates, demand in fiscal year 1985 exceeds recruit supply by about 88,000 in one case.

If the armed forces try to make up for these shortages with across-the-board pay increases, by 1985 they could add up to \$8 billion per year over today's manpower costs without any additions to military forces. Even if pay inducements were limited to bonuses for recruits, costs would go up by more than \$2 billion in 1985.

RECRUITING COSTS (+) AND SAVINGS (-) IN MILLIONS OF
FISCAL YEAR 1977 DOLLARS

	1978	1979	1982	1985	Total for 1978-1982
Increased Pay & Recruiting					
Pay raises	+160	+270	+3,730	+8,370	+8,190
Bonuses	+160	+270	+1,250	+2,560	+3,250
High Quality & Reduced Turnover	-100	-180	-150	-140	-780
Lower Quality & High Turnover	+30	+90	+260	+360	+670

Changes in manpower policies would allow the Defense Department to overcome projected shortages without large increases in cost. One approach would maintain high recruit quality but reduce demand for recruits. If the services increase the percentage of women from 6 to 10 percent, replace some military personnel in jobs that can be performed by civilians, but, most importantly, adopt the changes in turnover, training, and reenlistment that are discussed above, they could reduce demand for recruits in fiscal year 1985 by 88,000. Those actions would erase the shortage of recruits, even with very low unemployment rates in the 1980s, avoid large cost increases, and save about \$150 million per year in manpower costs.

Another approach is to accept reduced recruit quality but continue to be selective about the calibre of personnel who are kept on active duty. The United States disqualified about 42 percent of all potential recruits on physical or mental grounds, higher than the rejection rate among allied nations and far higher than the rate in the Soviet Union. Relaxing physical standards slightly would reduce the fiscal year 1985 shortage of recruits by about 8,000.

In future years, the services plan to increase the percentage of recruits who have high school diplomas. High school graduates typically have lower discharge rates than other recruits and are superior in other ways as well. These benefits must be weighed against the feasibility and costs of concentrating recruiting efforts on a diminishing supply of candidates. A return to quality levels of fiscal year 1974 would reduce the fiscal year 1985 shortage by 31,000. By accepting a higher proportion of applicants with low test scores, particularly high school graduates in this category, shortages could be reduced by an additional 16,000. Turnover would remain high because current programs would be kept in force to eliminate "marginal performers." However, this second set of options, along with some increases in recruiting and advertising, would also reduce the fiscal year 1985 shortfall by 88,000. Because of more rapid turnover and higher recruiting costs, these options could increase costs by about \$300 million per year after 1980.

Military Compensation

Over the past ten years, several study groups have concluded that the present military compensation system does not provide incentives that allow the Defense Department to recruit and retain the personnel it needs at minimum cost. The major problems include high costs, a complex system of benefits that does not provide uniformed personnel with a clear picture of their total pay, and a pay and allowance pattern that does not always help the Defense Department compete in the labor market for the personnel its needs.

Retirement Reform. Retirement reform not only can cut costs but is important to achieving a more effective pattern of incentives. Several study groups note that the Defense Department needs more trained personnel with 5 to 10 years of experience, fewer personnel with 10 to 20 years, and more personnel with 20 years or more. The current nondisability retirement system does not encourage such an experience pattern. It provides immediate annuities after 20 years of service, but

RETIREMENT COSTS (+) AND SAVINGS (-) IN MILLIONS OF
FISCAL YEAR 1977 DOLLARS

	1978	1979	1982	1985	Total for 1978-1982
Retirement Modernization Act	+150	+110	+50	-40	+470
Interagency Committee Proposal	+140	+90	-90	-500	+155
Other Changes (Immediate Implementation)	-55	-65	-70	-90	-320

virtually no benefits for less than 20 years of service. As a result, the retirement system provides little incentive to reenlist a first time because benefits are distant (first reenlistment usually occurs after three or four years of service). And, because the services feel obliged to let personnel who sign up for a first reenlistment remain on duty until they qualify for a pension, the current retirement system causes the services to refuse some first reenlistments to hold down the number who will qualify for full benefits.

A more effective retirement system would provide, or "vest", some benefits after as few as five years of service. This should increase incentives to reenlist and make the services more willing to encourage first reenlistees and then to discharge some of them, with pension benefits, after ten or twelve years. A reformed retirement system also probably would reduce benefits to personnel who retire after only 20 years of service and so increase the number who stay on after 20 years.

Retirement reforms affect costs as well as retention patterns. Most reforms increase costs by up to \$150 million a year for the first few years,

chiefly because of early vesting and transition provisions, but long-range savings are large. One Administration proposal saves \$700 million a year in today's dollars by the year 2000. Another proposal, by a governmental interagency committee, saves \$2 billion a year by the year 2000. Further study is required to choose among these and other proposals.

Other relatively minor changes to the retirement law could improve the equity and consistency of the military retirement system. These reforms cut costs in the long run and, if they are implemented immediately, also cut costs in the next five years.

Salary System. Military personnel receive several types of pay. Some are in-kind rather than in-cash, and some benefits are exempt from federal income and Social Security taxes. Earlier studies have recommended replacing the complex military pay system with a single, fully taxable military salary. Such a salary system would make total pay more apparent and easier to compare with compensation for other work, which might aid in recruiting and reenlistment programs and, conceivably, could reduce pressure for future pay raises. A salary system would also provide equal pay to single and married personnel when they have equal rank, experience, and responsibilities. (Single personnel now receive less pay.) A military salary system also would display all manpower costs in the Defense Department budget; some now are "hidden" as foregone tax revenues.

There are drawbacks to a salary system. It would create administrative problems, for example, in determining fair charges for food and housing that the Defense Department now provides. Some groups of military personnel, particularly married servicemen, will object because for a few years their salaries would grow at a slower rate than salaries for single personnel. At the same time, relatively faster growth of single persons' pay may reverse the growth in the fraction of the military force that is married. Fewer married personnel could eventually reduce costs of transfers, medical care, and other fringe benefits, though CBO has not estimated these savings.

In the first year or so, a salary system would almost certainly increase costs because of transition provisions designed to prevent any pay cuts. Beyond the first few years, the system could be designed to leave unchanged most costs to the government, with the roughly \$2 billion in higher costs to the Department of Defense offset by higher tax revenues from military salaries. For example, the illustrative salary system developed in this paper leaves most costs unchanged. Only Social Security revenues show a net increase, as do Social Security credits to military members.

SALARY SYSTEM COSTS (+) AND SAVINGS (-) IN MILLIONS OF
FISCAL YEAR 1977 DOLLARS

	1978	1979	1982	1985	Total for 1978-1982
Salary System					
DoD costs	+2,230	+1,790	+1,700	+1,700	+9,100
Tax revenues	<u>-2,150</u>	<u>-2,030</u>	<u>-2,060</u>	<u>-2,060</u>	<u>-10,310</u>
Net costs/ savings	+80	-240	-360	-360	-1,210

Pay Raises. The size of military pay raises affects defense manpower costs significantly. Even a 1 percent difference in the October 1977 raise would affect costs in fiscal year 1978 by about \$170 million. Costs over the next five years change by \$850 million in today's dollars.

At present, military raises are linked directly to those given to federal white-collar workers. Few white-collar workers do work that is comparable to that of military personnel. Thus, raises in military pay may not leave the Defense Department able to compete for the military personnel it needs. The paper outlines an alternative pay raise mechanism, in general terms.

In the absence of a new pay raise mechanism, the law gives the President authority to allocate raises among types of military pay in a variety of ways. Depending on how the authority is used, net costs to the government vary by as much as \$2.0 billion over the next five fiscal years. The paper discusses the costs and effects of the allocation options.

Civil Service Compensation

Thirty percent of defense manpower costs go for civilians. Thus the Department of Defense has a major stake in proposed changes in federal civilian compensation.

The pay of all General Schedule (white-collar) employees is determined by one national survey of professional, administrative, technical, and clerical employees in the private sector. The President's Commission on Federal Compensation (Rockefeller Commission) proposed that clerical and technical employees be separated from executive and managerial employees and that clerical/technical pay be determined on a regional basis. These two changes together should save all federal agencies about \$100 million per year and the Defense Department about \$40 million.

Larger savings would result from adopting the Rockefeller Commission proposals concerning Wage Board (blue-collar) employees. Current law insures that blue-collar workers are paid on average 9 percent more than their private-sector counterparts in comparable jobs; some workers could receive 35 percent more. Higher federal wages result from the way "comparable" pay must be determined and from the fact that wages for some workers in rural areas are based in part on urban salaries. The Rockefeller Commission proposals would eventually reduce defense costs by \$510 million per year in today's dollars. Transition provisions reduce first-year savings to \$100 million and savings over the next five years to \$1.7 billion. Although changes in both General Schedule and Wage Board pay would reduce costs, they are likely to be controversial.

They are, for example, opposed by public employee unions because they would restrain pay increases and change definitions of comparability.

Even without changes in federal pay schedules, the mix of General Schedule pay grades affects costs. The average grade of the Defense Department's General Schedule employees has increased about 6 percent since fiscal year 1964. The classification system used to establish General Schedule grades may have fostered some overgrading, though shifts in the composition of the white-collar force toward more technical occupations may also account for a significant portion.

If the Congress judges that some or all of past grade growth is unjustified, then grades can be reduced and so can costs. The table below shows that a relatively modest reduction, for example a return to the fiscal year 1975 grade distribution, still saves \$180 million over the next five years. A more drastic reduction, such as a return to the fiscal year 1964 distribution, saves much larger amounts.

CIVILIAN PAY SAVINGS (-) IN MILLIONS OF FISCAL YEAR 1977 DOLLARS

	1978	1979	1982	1985	Total for 1978-1982
White Collar Pay Changes	-40	-40	-40	-40	-200
White Collar Grade Distribution					
Return to fiscal year 1975	-20	-40	-40	-40	-180
Return to fiscal year 1964	-60	-180	-530	-530	-1,490
Blue Collar Changes	-100	-250	-510	-510	-1,700

This paper addresses the policies that dictate the numbers and costs of active-duty military personnel, retired military personnel, and civilian employees of the Department of Defense. Its central purpose is to present alternatives to those policies that will reduce manpower costs over the next five to ten years without altering military force levels and readiness.

The manpower budget for the Defense Department will account for more than half of all defense outlays in fiscal year 1977. The \$53 billion defense manpower budget for fiscal year 1977 is divided among 2.1 million active-duty personnel (\$25.7 billion); 1.17 million retired military personnel (\$8.4 billion); 1.04 million civilian employees (\$17.1 billion); and about 850,000 paid-drill reservists (\$1.7 billion). 1/

If military forces remain at current levels, then future defense manpower costs are likely to be dominated by two factors: the size of the annual requirement for new enlistments and the design of the military and civilian compensation systems affecting defense employees.

1/ Manpower Requirements Report for FY 1977, Department of Defense, February 1976, p. XV-4. These numbers are based on the President's fiscal year 1977 budget and do not reflect changes by the Congress. The \$53 billion cost of defense manpower excludes some types of costs that could push up the total. Excluded are operating costs for recruiting, medical service, training, commissaries, and food and barracks facilities; accrued retirement liabilities; and federal income and Social Security taxes foregone because some military pays are exempt from these taxes.

The Department of Defense plans to keep the active-duty military force at about its present level of 2.1 million men during the five fiscal years between 1978 and 1982. In order to sustain this force, it plans to take in between 450,000 and 480,000 new personnel a year, most of them enlisted recruits with no prior service experience.

The advent of the all-volunteer force in July 1973 introduced a new discipline into military manpower procurement that did not exist under the draft--the market interplay of demand, supply, and price. When the military services became all volunteer, they entered the labor market on equal terms with other potential employers of young men and women. While their initial experience in this environment has been successful, the transition to the all-volunteer force occurred in a favorable recruiting environment. The population of young people and the unemployment rate were both on the rise. But the population of young people will begin to decline during the next five years, and as unemployment rates return to more nearly normal levels, the labor market will become more competitive. Unless service objectives for numbers and quality of new recruits are modified, the Department of Defense could incur large added costs to sustain a force of 2.1 million.

Meanwhile, the Defense Department supports the all-volunteer force with a military compensation system that has not been systematically revised for many years. Not only military but also civilian compensation laws tend to work against efficiency and equity.

These general issues translate into specific questions that are raised in the text:

- o Is 2.1 million the minimum number of uniformed personnel required to man the present forces, or can the number be reduced by improving efficiency?
- o What will it cost to sustain present manpower strengths and attain the Defense Department's recruiting goals over the next five to ten years?

- o What options are available for minimizing manpower costs by reducing overall recruit requirements and particularly the requirements for recruits in categories where the supply is limited?
- o Can the military compensation system be made simpler and more responsive to the needs of both uniformed personnel and manpower managers?
- o What specific changes in compensation and retirement laws will lead to cost savings and greater efficiency?
- o Do present laws provide comparability in pay for civilian employees and, if not, how can the laws be modified?

Defense manpower issues are discussed in two parts in this paper. Chapters II and III consider military personnel management, with an emphasis on training, turnover rates, and recruiting. Chapter II presents options for reducing costs through reductions in the need for training and reductions in enlisted turnover. Chapter III looks at the potential supply of recruits over the next decade and measures the cost of alternative methods of recruiting.

Chapters IV and V address compensation issues directly, including the military retirement system, the structure of military pay and allowances, and civilian compensation.

CHAPTER II MILITARY PERSONNEL MANAGEMENT

This chapter examines various approaches to military personnel management that can reduce manpower requirements without reducing force levels or readiness. The principal focus is on the costs generated by training and by the annual rate at which new enlisted personnel are recruited to replace those leaving the armed forces.

MILITARY MANPOWER REQUIREMENTS

The overall "demand" for military manpower is set forth annually in the manpower requirements report of the Department of Defense. In the report for fiscal year 1977, the 2.1 million active-duty military personnel requested by the Department were grouped as follows (under a classification system known as Defense Planning and Programming Categories): 1/

Combat and Auxiliary Forces	1.2 million
Mission Support Forces	0.3 million
Central Support Forces	0.3 million
Individuals (trainees, patients, prisoners, and transients)	<u>0.3 million</u>
Total	2.1 million

Of the personnel in the first three categories, about 1.6 million are in combat, combat support, and other military units, or they fill billets which provide direct base and logistics support to these units. The rest--just under 500,000--represent various forms of personnel overhead: recruiters, trainers and their

1/ Manpower Requirements Report for FY 1977, Department of Defense, February 1976, p. II-18.

support, trainees, patients, prisoners, and persons in transit between assignments.

This necessary, but costly, overhead results from the design of the military personnel management system. Uniformed men and women of the armed forces are recruited, trained, moved, promoted, and retired within a closed system to which entry usually is provided only at the lower officer and enlisted pay grades. The bulk of the overhead is occasioned by a need, under existing policies, to replace annual losses. The losses, in turn, are a result of deliberate management decisions on retention of personnel during and after their first term of service, which lasts on average three to four years. The military services plan to bring in 450,000 to 480,000 new personnel each year for the next five years to sustain an active duty force of 2.1 million. Ninety percent of these accessions will be enlisted recruits who have no prior service experience and who will require extensive training.

The relationship between manpower requirements and force levels is not rigid. Manpower requirements result, in part, from the numbers of divisions, air wings, ships, and other combat and support organizations and their desired degree of readiness. But they also are affected by a variety of manpower practices and policies which can be summed up as follows:

- o Utilization practices, or the ways in which manpower is used in the operation of military forces: for example, the number of men required to man a ship or an aircraft maintenance unit; the size of a tank crew; the number of pilots per aircraft.
- o Personnel policies, the policies that govern the rates at which military manpower is renewed, trained, moved, and promoted, establish objectives for the male-female mix and experience and rank profiles of military manpower, and set physical, mental, and educational standards for recruits and reenlistees.

It follows that changes in the number of military personnel can result both from changes in force levels and readiness and from changes in military personnel policies and utilization practices. Military manpower requirements can be reduced, without reducing force levels or readiness, by:

- o Improvements in utilization resulting in greater productivity per man.
- o The substitution of civilian or contract labor in defense activities that do not require uniformed personnel.
- o Changes in military personnel practices which reduce personnel in such overhead activities as training or which reduce losses, or "turnover."

Military personnel management policies affect not only the number of personnel needed, but also the kinds of personnel. Structural changes in requirements--for example, increasing or decreasing the ratio of women to men, or raising or dropping mental and physical standards--can have a significant impact on the availability of new recruits and, hence, on costs. (Recruiting policies are discussed in more detail in Chapter III.)

The record of the first three years under an all-volunteer force provides ample illustrations of the ways in which personnel policies affect readiness. Through a combination of efficiency cuts and changes in the force structure, the services reduced total military manpower requirements by 60,200 spaces between fiscal year 1974 and fiscal year 1977, while at the same time increasing the number of active divisions, tactical air wings, and naval combatant ships. Simultaneously, the services changed their personnel management policies in response to the favorable recruiting environment of 1975-1976, significantly increasing both the quality of recruits and the turnover rate.

This chapter and the next explore further changes in manpower requirements that can result from changes in military personnel policies and improvements in

training efficiency. The steps identified in this chapter will permit a cut of nearly 50,000 in military end strength without reducing force levels and readiness. Alternatively, these savings could be used to provide additional manpower for strengthening the operating forces. (This paper does not address changes in force levels or readiness.)

The changes discussed in this chapter are by no means all-inclusive, as the search for efficiency runs to every corner of the defense establishment. A number of efforts are now underway in the Defense Department to improve the productivity of both uniformed and civilian personnel in a wide range of activities. These include various efforts to increase the efficiency of maintenance operations for existing weapons systems and to reduce the maintenance costs of weapons systems now being designed; efforts to achieve economies of scale through base consolidations; and efforts to substitute machines for manpower through fast-payback capital investments. This chapter makes no attempt to assess any of these varied activities or to calculate their impact on manpower requirements. Thus the end strength reductions outlined here cannot be considered definitive as to the limits of potential manpower savings which can be accomplished, in time, without cutting forces or readiness.

TRAINING

The Defense Department, through the military services, operates a formal military training establishment which in fiscal year 1977 will require 18 percent of all active duty military personnel and cost at least \$6.25 billion. These personnel and costs are associated only with training which takes place at training centers or academic institutions; the costs of training conducted in military units are not included. Table 1 displays these costs and the manpower

TABLE 1. DEPARTMENT OF DEFENSE INDIVIDUAL TRAINING AND EDUCATION PROGRAMS, FISCAL YEAR 1977 a/

Training Category	Obligational Authority	Student Man-Years <u>b/</u>	Military Staff	Civilian Staff
	(1977 dollars, in millions)	(manpower in thousands)		
Recruit Training	982.0	78.6	20.8	6.8
Officer Acquisition	370.0	16.2	5.4	6.5
Specialized Skill	3,231.0	147.0	66.0	27.7
Flight Training	996.0	5.9	23.5	7.9
Professional Development	399.0	8.1	3.6	3.4
Supplemental	273.0	N/A	--	--
Unallocated Staff <u>c/</u>	--	--	10.9	8.9
Total, <u>d/</u> Individual Training and Education Programs	6,251.0	255.9	130.1	61.2

SOURCES: Military Manpower Training Report for FY 1977, Department of Defense, March 1976, p. IX-4; and Senate Armed Services Committee, Hearings on Fiscal Year 1977 Department of Defense Authorization, 94-2, 1976, Part 7, pp. 4484, 4487.

a/ Recruit and officer acquisition training are given to all new enlisted and officer personnel. Specialized skill training consists of initial skill training for graduates of recruit and officer acquisition programs, skill progression training, and "functional" training, such as airborne and ranger qualification, survival training, and similar programs. Flight training prepares prospective pilots and navigators. Professional development education pays for professional training of senior officers and enlisted personnel, or for education of military personnel in academic disciplines.

b/ Workloads.

c/ Table assumes that all manpower costs are allocated.

d/ Figures may not add due to rounding.

associated with formal training. These costs result from the number of student man-years and the average cost per student. Costs can be reduced by cutting the length of training (which results in fewer student man-years for a given number of graduates) and by cutting the average cost per student.

This paper concentrates on enlisted entry training. About one-half of the costs and nearly two-thirds of all military student man-years in fiscal year 1977 are associated with the preparation of enlisted recruits for military duties. This entry-level training typically is divided into two phases: recruit training, given to all recruits with no prior service experience; and initial skill training, given to all but a few of the graduates of recruit training.

Recruit training introduces the basic features of military life: conduct, discipline, and physical fitness. To this core, each service adds course material reflecting its separate mission. The Army and Marine Corps teach all recruits basic combat skills; the Navy and Air Force do not. The Navy stresses conditions of shipboard life. Partly as a consequence of these differences, the length of recruit training varies by service.

Initial skill training provides a varied menu of courses, ranging in length from two weeks to more than a year. Each course is designed to teach the basic job-oriented skills needed to qualify a graduate of recruit training for an occupational specialty. The Navy, which sends a large percentage of its recruit graduates to a short apprentice school and then to on-the-job training, has the shortest average course length in this phase of training (six weeks); the Air Force, with a high percentage of students in technical training courses, has the longest average course length (15 weeks).

As Table 2 shows, the services with shorter recruit training courses tend to have longer average initial skill training, and vice versa. Considering recruit and initial skill training loads, the weighted average course length for all services is 17 weeks, or about four months.

TABLE 2. ENLISTED TRAINING LOADS AND AVERAGE COURSE LENGTHS, FISCAL YEAR 1977

	Army	Navy	Marine Corps	Air Force
Authorized Training Loads:				
Recruit	32,404	20,356	14,234	11,114
Initial skill	<u>41,136</u>	<u>19,440</u>	<u>8,451</u>	<u>22,155</u>
Total	73,540	39,726	22,685	33,269
Average Course Length (in weeks):				
Recruit <u>a/</u>	7+	9	11+	6
Initial skill	<u>9</u>	<u>6</u>	<u>8 <u>b/</u></u>	<u>15</u>
Total	16+	15	19+	21

SOURCE: Military Manpower Training Report for FY 1977, Department of Defense, March 1976.

- a/ The standard course lengths for the Navy and Air Force include "fill" time; the standard course lengths for the Army and Marine Corps do not. Army and Marine recruits spend an average of three additional days in their recruit training companies awaiting the start of the standard training course.
- b/ Between 30 and 35 percent of the graduates of Marine recruit training report to operating units. The remainder receive an average of about 11 weeks of initial skill training.

Potential Economies in Length of Training

From the Korean War through 1975, the military services were prohibited by law from assigning personnel with less than four months of training to overseas duty on land. The practical effect was to establish a minimum length for entry-level training courses of approximately 16 weeks.

Although a number of studies of military training over the past 20 years have suggested that acceptable replacements could be trained in considerably less time (particularly in the Army), ^{2/} the four-month legal requirement discouraged efforts to improve training efficiency by reducing course length. Last year, the Congress reduced the required length of training to 12 weeks (P.L. 94-106, Section 802). This change in the law opened the door to large savings in training loads and resources. Potential savings are possible in four areas:

- o More efficient use of trainee time, through elimination of administrative delays, and more effective use of weekends in training. Army studies have identified more than three weeks of such savings in the normal 16-week entry-level training period for Army recruits.
- o Condensed programs of instruction resulting from job-oriented training and better definition of essential entry-level skills.
- o Self-paced instruction in technical skills.
- o For training conducted on one base, elimination of administrative, processing, and travel time associated with moving from one training base to another during entry-level training.

^{2/} One Station Unit Training (OSUT) Test Report,
U.S. Army Training and Doctrine Command, Fort
Monroe, Virginia, November 1, 1976, pp. B12-B24.

Army Entry-Level Training. In the past two years, the Army has conducted experiments which demonstrate that large numbers of trainees can be effectively trained in 20 to 25 percent less time than the present 16-week average. However, the Army's training plan ties potential savings from these course changes to a reorganization of the Army training establishment, which includes substantial military construction costs.

The Army plan envisions, first, conducting all phases of initial entry training for a particular group of skills at a single base, and, second, conducting a portion of such training under a single instructor cadre. Prior to 1973, most Army recruits took recruit training at one military base and then moved to another base for initial skill training. (In Army terminology, the two phases are called basic combat training and advanced individual training.) In 1974, the Army began to move to "One Station Training" for an increasing number of recruits. In the process, it increased the number of recruit training centers from six to eight, all located on bases where skill training courses are taught. The Army plans to open yet another recruit training center--its ninth--at Fort Benning, Georgia, in fiscal year 1979. The percentage of recruits receiving all their entry-level training at one station increased from 26 percent in fiscal year 1973 to 60 percent in fiscal year 1977, and is projected to rise to more than 80 percent in fiscal year 1979. 3/

The second phase of the Army training reorganization involves using a single cadre in training programs that combine basic and initial skill training in a single program of instruction. Using this program, known as One Station Unit Training (OSUT), the Army has tested a shorter version of initial entry training (for example, 12 instead of 16 weeks for engineers) for a number of the so-called "high density" entry training

3/ Briefing on Initial Entry Training, U.S. Army Training and Doctrine Command, Fort Monroe, Virginia, November 24, 1976.

programs. 4/ (High-density courses turn out large numbers of graduates annually for such major occupational groupings as infantry, armor, engineers, signal, artillery, transportation, etc. The Military Manpower Training Report for FY 1974 estimated that 60 percent of Army recruits receive training in high-density occupations.) 5/

The Army tests involved about 15 percent of fiscal year 1977 entry-level trainees in One Station Unit Training programs. In the tests, the quality of graduates from 12-week courses compared favorably with the quality of graduates from traditional 16-week training programs. Loss rates during training were significantly lower for the 12-week programs than for the 16-week programs to which they were compared.

Army analysis of savings in training time accomplished in these OSUT programs reached the following conclusions: 6/

- o The majority of the days saved (more than two weeks) came from cutting essentially slack time during the initial skill phase of training. This slack time included time that had been set aside during training hours for administrative procedures, and most of the weekends.
- o About four days were saved by eliminating graduation from recruit training and the move to another location for initial skill training.
- o Other time was saved by cutting administrative time built into the recruit training phase, using weekends during this phase, and making modest reductions in the hours of instruction provided.

4/ One Station Unit Training (OSUT) Test Report.

5/ See p. 14 of Training Report.

6/ Information provided by U.S. Army.

Although most of these savings clearly have application to training, whether conducted at one or two stations and whether conducted with a single cadre or not, the Army presently plans no significant reductions in entry-level training loads that can be attributed to shorter courses. Plans for future reductions are tied to expansion of One Station Unit Training, which the Army makes contingent on approval of a request to move all infantry training, including infantry OSUT, to Fort Benning, Georgia. About \$50 million in military construction costs are associated with starting OSUT at Fort Benning. The House Appropriations Committee has delayed Army plans for this realignment pending completion of a study of Army division basing plans.

The Army has argued (in unpublished briefings for the House Appropriations Committee) that the quality of graduates from courses of reduced length depends critically on the single-cadre concept. However, the Army did not test shortened courses using the traditional two-cadre approach (one for recruit training, another for initial skill training), and so can offer no conclusive evidence on this point. Moreover, the major source of savings identified above--elimination of extra administrative time and unused weekends (which may originally have been designed as padding to delay a recruit's departure from training before the end of the four months previously required by law)--should have little or no effect on recruit quality.

In addition to the time savings identified in the OSUT tests, still other opportunities exist for condensing the time spent in Army entry-level training:

- o Army recruits spend an average of a week between their reception into the Army and the beginning of formal training; this period can be used for some training.
- o Present Army training schedules allow four days between the end of recruit training and the beginning of skill training for recruits who must travel from one training base to another. Actual travel time is often considerably less than one day, and schedules can be revised to reflect this fact.

- o For skill training courses with relatively low student density, self-paced instruction has been shown to reduce training time by 10 to 30 percent, and the technique can be more widely used. 7/

If the Army exploits a combination of approaches to reducing training time now, it can reduce initial entry training loads by more than 13,000 in fiscal year 1978 and--allowing time to phase in self-pacing--by more than 15,000 in fiscal year 1979. Recruit training loads would be reduced by about 6,500 student man-years; the balance of the reductions would apply to initial skill training. Savings in staff man-years associated with this reduction in loads would be 5,000 uniformed personnel in fiscal year 1978, rising to 5,700 in fiscal year 1979, and roughly 1,000 civilians in each year. (These savings assume no bases are closed. If a base or bases were closed, long-term savings would be higher.) The cumulative manpower savings--which could be made available to the operating forces or reduced from end strength--would be 21,000 a year after the first year. The budgetary savings amount to \$144 million in fiscal year 1978 and \$165 million a year thereafter.

Navy Recruit Training. During the transition to the all-volunteer force, the Navy increased the length of recruit training from seven to nine weeks. Navy experience with recruits in the past three years has been more favorable than expected, and the Navy now plans to reduce the length of recruit training to eight weeks in fiscal year 1978 by eliminating some obsolete training (such as manual-of-arms instruction).

Navy recruit training can be cut further by eliminating a "service week" during which the trainee's full time is now devoted to guard duty, kitchen police, and other non-training duties, and which is intended to provide a preview of a typical work-week aboard ship.

7/ Some examples are given in the Military Manpower Training Report for FY 1977, p. C-8.

All military services require recruit trainees to perform such duties, but only the Navy devotes a full week of training time to them. The other services require trainees who perform guard, kitchen police, and other duties to make up lost training time during evenings and on weekends. Adoption of this practice by the Navy would make possible a return to a seven-week recruit training course. The reduction to seven weeks should save 4,500 student man-years, 700 military staff man-years, and over 100 civilian man-years, beginning in fiscal year 1978. The Navy budget could be reduced by \$40 million a year beginning in fiscal year 1978. (Reduction to eight weeks would halve the savings.)

Air Force Recruit Training. The Air Force presently provides six weeks of recruit training, including a week of "fill" time during which trainees wait for their units to fill up before training begins. Air Force recruits spend an average of 43 hours per week in classes, compared to 50 for the Navy and 60 for the Marines. 8/ An increase in the pace of weekly training and some reduction in "fill" or other administrative time would permit at least a one-week saving in the length of Air Force recruit training. Fiscal year 1978 savings would be approximately 1,900 student-years, 500 military and civilian staff-years, and approximately \$20 million in fiscal year 1978 and thereafter.

Marine Corps Recruit Training. This paper does not provide any options to reduce the cost of Marine Corps recruit training, although this training takes longer than that provided by the Army and Navy. The rationale for this omission is the current priority being given to reducing abuses in Marine recruit training--an effort that could be adversely affected if training courses were concurrently made shorter. However, the Marine Corps has a larger proportion of its manpower in training than the other services; in the long run

8/ Report on Preventing Abuses in Recruit Training in the Military Services, Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs, 1976, p. 3.

it could also benefit from the kind of training efficiencies discussed in this paper, with their associated impact on end strengths and enlistment requirements. For example, a 20 percent cut in the average length of Marine entry-level enlisted training would reduce student loads by more than 4,000. If converted into lower end strengths, this would allow a 5 percent cut in annual Marine enlistments.

Reducing the Cost Per Trainee

Initial entry training will cost about \$3 billion in fiscal year 1977, for an average cost per student-year of roughly \$17,000. About 40 percent of this cost represents student pay and allowances; the remainder covers the cost of trainers, support personnel, other operating expenses, and a small amount of procurement and military construction. Most of this cost of training and support goes for salaries of military and civilian employees of the military training establishment.

In recent years, the Congress has focused on the costs of military training by comparing the staffing of military training and that of civilian education. The military training establishment clearly has a higher ratio of staff to students than is generally found elsewhere. A 1976 study by the Department of Defense, for example, found the following relationships displayed in Table 3.

Reasons cited in the study for the higher military ratio included longer weekly hours of instruction for military trainees (40 hours or more compared with 12 to 25 hours for secondary and higher educational institutions), greater supervisory requirements for training, more use of complex equipment and proportionately fewer lectures, more administrative overhead occasioned by a higher rate of turnover, and a need to provide a full range of support, including medical and community services, to trainees.

TABLE 3. STUDENTS PER INSTRUCTOR AND STAFF MEMBER,
DoD TRAINING AND EDUCATION

	Civilian		DoD	
	Public Secondary Schools	Non-Public Colleges and Universities	Recruit Training	Specialized Skill Training
Students per Instructor	19.7	12.3	11.1	4.6
Students per Member, Total Staff	10.2	4.5	2.6	1.4

SOURCE: Military Manpower Training Report for FY 1977, p. B-17.

The study cited another limitation to the use of staff-to-student ratios as a criterion for training efficiency. It pointed out that lengthening the course of training (for example, by putting in additional administrative time, teaching shorter hours per week, etc.), which has the effect of increasing student loads, would cause such ratios to improve statistically but would actually decrease training efficiency.

These criticisms of staff-student ratios make clear their limitations. Nevertheless, large differences between military training and civilian training cited above suggest that there may be inefficiencies in the military training establishment.

Another approach to the question of relative efficiency is to look at differences between the military services. A CBO analysis found significant differences among the services in the costs of training and supporting one student. Table 4, computed from data submitted by the Defense Department to the Senate Armed Services Committee, illustrates the point. The table covers both recruit and specialized skill training. In the latter category are included not only enlisted initial skill training, but all other types of skill training. (Enlisted initial skill training makes up about two-thirds of all specialized skill training loads.)

TABLE 4. DEPARTMENT OF DEFENSE RECRUIT AND SPECIALIZED SKILL TRAINING AND SUPPORT COSTS PER STUDENT; STAFF-STUDENT RATIOS FISCAL YEAR 1977

	Army	Navy	Marine Corps	Air Force
<u>Recruit Training</u>				
Weekly Training and Support Costs per Student <u>a/</u>	\$140	\$60	\$78	\$95
Approximate Training and Support Costs per Graduate <u>b/</u>	\$980	\$540	\$858	\$570
Staff-Student Ratio	1:1.8	1:3.4	1:2.9	1:3.7
<u>Specialized Skill Training</u>				
Weekly Training and Support Costs per Student <u>a/</u>	\$249	\$167	\$202	\$255
Approximate Training and Support Costs per Graduate <u>b/</u>	\$2,316	\$685	\$2,161	\$2,295
Staff-Student Ratio	1:1.4	1:1.6	1:1.3	1:1.3

SOURCES: Derived from data published in the Military Manpower Training Report for FY 1977, Department of Defense, March 1976, p. IX-3; and Senate Armed Services Committee, Hearings on the Fiscal Year 1977 Defense Authorization, 94-2, 1976, Part 7, pp. 4467, 4484.

a/ Excludes student pay and allowances.

b/ Cost per student-week times average length of training. Also excludes student pay and allowances. This measure does not fully reflect losses during training (trainees who fail to graduate). True costs per graduate would be higher due to these losses and to the addition of student pay and allowances.

Several striking differences emerge from this analysis. The Army spends 130 percent more than the Navy to provide a week of training to the average recruit, 80 percent more than the Marine Corps, and nearly 50 percent more than the Air Force. In the specialized skill area, Army costs are about 50 percent higher than the Navy and about 25 percent higher than the Marine Corps. Although Army and Air Force specialized skill training costs per student-week are approximately equal, the Army, compared to the other forces, trains a larger fraction of its new personnel in so-called "high-density" occupations. Training courses for these occupations have high numbers of annual graduates, which should allow significant economies of scale.

The cost differences displayed in Table 4 can be traced in part to differences in staff-student ratios. The Army, for example, allocates one staff member on average to train and support 1.8 recruits; the Navy has one for every 3.4 students.

While none of the available data give conclusive evidence of all the reasons for the reported differences in training costs per student (a portion, for example, may be due to accounting differences), the size of the range--particularly in recruit training--strongly suggests that the Army could achieve significant economies in training and support manpower.

Some savings can be achieved without closing training bases. Such actions would include an effort to smooth seasonal peaks and valleys in the annual training load through better scheduling of reporting dates for new recruits; increased use of Reserve Component manpower to help train summertime peak loads; and a reduction in the average number of trainers and support personnel per trainee to levels approaching that of the other services.

That portion of Army training manpower which administers and operates bases, training centers, and hospitals is relatively fixed. Since the approach discussed above would leave the present number of Army training bases unchanged, few if any of these personnel

would be saved. Nevertheless, the approach could reduce Army recruit training manpower by 4,100 military personnel and about 900 civilians in fiscal year 1978, saving about \$48 million.

Substantially larger savings--possibly over \$100 million a year--could be realized over time if Army training bases were consolidated to reflect the 20 percent reduction in student loads discussed in this section. (In this connection, it should be noted that potential reductions in turnover, discussed in the following section, would further reduce Army initial entry training loads by nearly 9 percent from fiscal year 1977 levels.)

However, reductions in the training base, which also involve costs that probably eat up most initial savings, would take several years to realize because of administrative delays imposed by environmental impact statements and other local considerations. Thus an estimate of the additional manpower and dollar savings which would result from a consolidation of the Army training base is not included in the options discussed in this paper.

BUDGET OPTIONS

The training issues discussed above can be summarized in two budget options. Together these options achieve savings of \$250 million in fiscal year 1978, rising to \$275 million in fiscal year 1979. Total savings in the first five years would be roughly \$1.4 billion, even if no training bases are closed. An estimate of the additional savings from consolidation of Army training bases is \$125 million a year by fiscal year 1985.

Option 1. This option reduces the length of initial entry training for the Army, Navy, and Air Force. The savings, in student man-years and associated staff, come to 29,500 in fiscal year 1978 and 29,700 in fiscal year 1979 and thereafter. Budget savings are \$200 million in fiscal year 1978, and \$225 million annually thereafter.

Option 2. This option initiates action to reduce Army recruit training costs per student by cutting 4,100 military and 900 civilian spaces. Annual savings are approximately \$50 million.

If the manpower saved through these options were transferred to the operating forces, there would be no net saving in the defense manpower budget, while investment in new weapons might rise in order to equip the new forces so created.

If the manpower saved through these options is cut from end strengths, not only would military end strengths be reduced by nearly 34,000, and civilian strength by more than 2,000, but there would also be reduction in enlistment requirements of 9,500 active duty personnel a year.

ENLISTED TURNOVER

The ratio of new enlistments to total military strength is known as the turnover rate. As the turnover rate increases, so does military personnel overhead in the form of trainees, trainers, recruiters, and personnel in transit between assignments. If personnel spend less time, on average, in military service, then fewer experienced personnel are available to man the forces. One way to reduce overhead costs, reduce recruiting requirements, and increase the experience mix is to cut turnover.

Reduced turnover was one of the anticipated benefits of the all-volunteer force, which eliminated two-year terms of service that were common under the draft and also was expected to increase reenlistment rates. The President's Commission on an All-Volunteer Armed Force (Gates Commission) estimated in 1970 that 290,000 enlistees per year would be needed to sustain a military force of 2.25 million, which implies a 15 percent turnover rate. 9/

9/ The Report of the President's Commission on an All-Volunteer Armed Force (Gates Commission), The MacMillan Co., 1970, p. 42.

But from 1977 through 1982, the services report plans for annual enlistments of between 400,000 and 430,000 persons without military experience to sustain a force of 2.1 million. The projected turnover rate will average 23 percent a year. This is not only higher than the 15 percent anticipated by the Gates Commission; it is higher than in any recent period except the Vietnam War years.

TABLE 5. DOD ENLISTED TURNOVER: PROJECTED AND PAST

Period		Turnover Rate (in percents)
1963-1965	Pre-Vietnam	20.2
1966-1971	Vietnam Peak	28.5
1972-1973	Vietnam Phaseout	22.8
1974-1976	All-Volunteer Force Transition	22.6
1977-1982	DoD Projections	23.4

Lower turnover rates cut some costs. Personnel are more experienced and more productive; fewer personnel are needed to perform a given military mission. ^{10/} With lower turnover rates, fewer personnel flow through the system, which decreases costs of recruiting,

^{10/} One study, in particular, implies that second-term personnel may be 50 percent more productive than first-term personnel. Robert M. Gay, Estimating the Cost of On-the-Job Training in Military Occupations: A Methodology and Pilot Study, Rand Corporation, R-1351-ARPA (processed: 1974).

training, and household moves. These savings can be large. For example, avoiding the need to recruit an additional high school graduate enlistment saves around \$5,500. (See Chapter III.)

A problem often cited as a reason not to lower turnover rates--an overage military force--would not appear to be significant at present, even with major reductions in turnover rates. The median age of all military personnel is 24 years, and only 7 percent of the force is over 40 years of age. 11/

But lower turnover is not an unmixed blessing. The average costs of pay and allowances per person will increase because of the higher proportion of senior people, and, if more people are kept to retirement age, so will retirement costs. Reduced losses will mean a higher proportion of personnel in senior grades, unless promotion opportunities are cut. This reduced turnover places special management burdens on the services to keep promotion opportunities from stagnating. And reasonably high turnover, especially in the first term, may be desirable to force marginal performers and potential troublemakers out of the services early in their careers.

Thus, the issues are: Can turnover be reduced? If so, what are the effects on cost and management? The high rate of enlisted turnover stems in part from new administrative procedures that have resulted in about a 50 percent increase in discharges during the first term of service. This section first considers the costs and effects of options to reduce first-term attrition. Because turnover also results from strict limits that the Defense Department and the military services have placed on first-term reenlistments, the section next considers ways to reduce turnover by increasing reenlistments.

11/ "Selected Manpower Statistics," Department of Defense (processed: 1976), p. 37.

Reduced First-Term Attrition

A principal reason for increased turnover is attrition during the first term of service, which has increased from approximately 25 to 37 percent in the last four years. ^{12/} The biggest increase occurred in fiscal year 1974.

The increase in first-term attrition results from the new administrative discharge procedures that make it possible to separate personnel prior to the end of the term of service. The new procedures were prompted by the report on the fiscal year 1974 Department of Defense appropriations bill by the House Appropriations Committee that urged simplified procedures for discharging "marginal performers" who have served at least one year after initial training. Each of the services has now adopted such programs, though administrative provisions differ by service and also differ to some degree from the Committee suggestions. ^{13/}

While the administrative provisions differ in minor ways, the size of the programs differs in a major way from the original intent of the Appropriations Committee. The Committee suggested a goal for marginal performer discharges of 6,500 for fiscal year 1974. The increased losses during the first term for DoD are estimated to be in excess of 40,000 per year for fiscal years 1977-1982, more than six times the Committee guidelines. Even some of the Defense Department staff have objected to this large program of early discharges. The Assistant Secretary for Manpower and Reserve Affairs suggested guidelines in December 1975 to control post-training losses. These guidelines, which are not

^{12/} These rates assume the same educational and test score distributions of the entering class of enlistees. For a discussion of the important connection between these factors and first-term attrition, see Chapter III.

^{13/} See, e.g., "Urgent Need for a Department of Defense Marginal Performer Discharge Program," General Accounting Office, FPCD-75-152 (processed: April 23, 1975).

reflected in current service plans, would limit total losses to 5 percent per year of service after the initial training period (approximately six months). 14/

One option to reduce first-term attrition would impose such a limit. This limit would cut first-term attrition from its current level of 37 percent to 28 percent. In the opinion of the Office of the Secretary of Defense, the reduction in losses would not decrease military effectiveness. The services would not be forced to keep an inordinate number of marginal performers, although marginal performer discharges would have to occur during training rather than later in the first term. CBO estimates that implementing these guidelines would save \$80 million in fiscal year 1978, and a total of \$400 million over the next five years, while still providing the same trained strength (i.e., number of persons with more than six months service). The savings occur because there are 7,000 fewer untrained personnel (with less than six months) and, thus, pay and training costs are lower. In addition to these cost savings, following the recommendation of the Office of the Secretary of Defense would cut enlistment requirements by 16,000 male enlistees per year. As Chapter III points out, this will help solve a serious recruit shortfall, and help the services avoid higher recruiting costs.

A second option would restore first-term attrition rates to their former levels. Although the first option significantly cuts turnover, the reductions suggested by the Office of the Secretary of Defense still leave turnover rates above those experienced before fiscal year 1974, when new attrition policies were implemented. The period before fiscal year 1974 was one of considerable turbulence, with the military being reduced in size. But even under those circumstances, the loss rates were lower than those of today. A return to the loss rates experienced before fiscal year 1974 would

14/ Memo to the services from William K. Brehm, Assistant Secretary for Manpower and Reserve Affairs, December 24, 1975.

save \$160 million in fiscal year 1978 and \$800 million over the next five years. Even with these lower loss rates, careful management would permit discharges of marginal performers; the program would be small, perhaps the size of that suggested by the Appropriations Committee. In addition to cost savings, a return to pre-fiscal year 1974 loss rates would reduce requirements for new recruits by approximately 35,000 persons per year.

All of these proposed reductions assume the services are able to maintain constant quality of recruits, of which the percentage of high school graduates is the most important single indicator. The relationship between first-term attrition and the quality of recruits is discussed in Chapter III.

Increasing Reenlistments

First-term reenlistments usually occur after three or four years of service. In some cases the services are turning down qualified persons who want to reenlist. The major reason is that the services are limiting the total number of personnel in the career force--that is, beyond the first term of service. For DoD as a whole, service plans would hold the percentage of enlisted personnel with more than four years of service to less than 40 percent of the force. There are several reasons for limiting the percentage of reenlistees in the career force:

- o A significant portion of those who reenlist once will serve to retirement. Increasing the size of the career force, the services argue, will generate higher retirement costs in the future, and the services are reluctant to accept reenlistments at the end of the first term, then force out large numbers of personnel at the end of a second or third term. This is because present law provides no vesting of retirement benefits for those with less than 20 years of service.

- o "Career" personnel (those serving beyond the first term of service) are more costly than first-termers due to seniority and higher rank.
- o The resulting experience levels keep the average age of the military low. This may be desirable to promote a "youthful and vigorous" force.
- o By keeping the career force small relative to the first-term force, the services are able to provide greater promotion opportunities for careerists.

DoD enlisted personnel plans have been criticized, however, on several grounds:

- o The plans take no account of Defense Department and other proposals for retirement reform which, if enacted, would reduce the costs of improved retention (see Chapter IV).
- o The policy makes no provision for occupations where the greater productivity of career personnel more than outweighs their added costs, although the policies are designed to provide adequate numbers of supervisory personnel. Cost analysis of the enlisted personnel plan is based on the notion of maintaining a given number of military personnel, not a given level of effectiveness.
- o Limiting the career control point to first-term reenlistments, for instance, ignores the advantages of keeping fully trained journeymen for about 10 years, as suggested by the Defense Manpower Commission. 15/

15/ Defense Manpower: The Keystone of National Security, Defense Manpower Commission, (Government Printing Office: April 1976), Chapter VII.

- o The plans are based on the assumption that new enlistees will continue to be available in the quality and quantity the services need, despite mounting recruiting problems for the services and the high costs of recruiting.

These criticisms suggest the need for a new evaluation of DoD's enlisted management plan. Such a reevaluation may well conclude that the services should increase the number of reenlistments, which is feasible. Reenlistments could be increased by accepting all qualified persons who want to reenlist. In addition, the equivalent of reenlistments can be obtained by recruiting more personnel with prior military service. In fiscal year 1978, the Army is reducing prior service enlistments by about 10,000 despite the continued availability of these personnel.

An increase of 20,000 reenlistments per year--either by accepting more first-term reenlistees or more prior service enlistments--should reduce manpower costs by \$100 million per year for each of the next five years while maintaining a constant level of trained manpower (i.e., manpower with more than six months of service). ^{16/} The savings reflect reductions in recruit and basic training and move-related costs, as well as the reduced number of personnel required to maintain trained strength. Savings take into account the higher costs of larger numbers of senior personnel. In addition to saving money, this option reduces recruit requirements by 25,000 in fiscal year 1978; by fiscal year 1982, reductions in recruit requirements have

^{16/} Savings assume all reductions are in the Army. Relaxing this assumption should not significantly affect the numbers.

grown to 40,000 per year. Savings from cuts in required recruits are not included here, but are discussed in Chapter III. 17/

The savings cited above do not include retirement costs, which will increase. Under the present retirement system, no change would occur until the added reenlistees complete 20 years of service, at which time costs would be substantial. But the Administration has proposed a different retirement system (see discussion of the Retirement Modernization Act in Chapter IV) which would provide some benefits after as few as five years. Assuming that this reform is passed, and that added reenlistees are kept 12 years and are provided with separation payments when they leave, then long-run savings still amount to \$50 million per year. Savings in the next five years are unchanged.

17/ While these represent CBO's best estimates, the savings require some important qualifications. The savings make no provisions for greater reenlistment bonuses, for additional retraining costs to convert reenlistees to new occupations, or for the costs of other inducements needed to increase reenlistments in the magnitudes indicated here. Consequently, some of the money saved may have to be spent on these items. At the same time, the analysis makes rather conservative estimates of the differences in productivity between first-term personnel and careerists. The period of nonproductive or less productive time for first termers may extend well beyond the six months assumed here and, even then, first-term personnel will not be as productive as careerists. If less conservative assumptions were made, greater first-term manpower reductions could be justified, and these would produce greater savings.

SUMMARY OF MANPOWER MANAGEMENT OPTIONS

This chapter has identified several budget options that promise savings for fiscal year 1978 and beyond in the areas of training, first-term attrition, and reenlistments. These options will also affect personnel strengths, chiefly by reducing the numbers of untrained personnel. These options, as Chapter III discusses, also reduce the numbers of enlistments needed to meet manpower requirements. Table 6 and Table 7 show the costs (in 1977 dollars) and manpower effects of these options for fiscal years 1978 through 1985.

TABLE 6. PERSONNEL MANAGEMENT OPTIONS, CHANGES IN MANPOWER COSTS IN MILLIONS OF FISCAL YEAR 1977 DOLLARS

	Fiscal Years			
	1978	1979	1982	1985
Training Efficiencies				
Shorten entry training	-200	-225	-225	-225
Reduce Army training staffs	-50	-50	-50	-50
First-term Attrition				
OSD proposal	-80	-80	-80	-80
Pre-1974 rates	-160	-160	-160	-160
Increased Reenlistments	-100	-110	-90	-30

TABLE 7. PERSONNEL MANAGEMENT OPTIONS, CHANGES IN MILITARY END STRENGTHS

	Fiscal Years			
	1978	1979	1982	1985
Training Efficiencies				
Shorten entry training	-27,000	-30,000	-30,000	-30,000
Reduce Army training staffs	-4,000	-4,000	-4,000	-4,000
First-term Attrition				
OSD proposal	-7,000	-7,000	-7,000	-7,000
Pre-1974 rates	-12,000	-12,000	-12,000	-12,000
Increased Reenlistments	-6,000	-8,000	-10,000	-11,000

A significant decline in the population of young people and gradual but steady reductions in unemployment rates could whittle away one-third of the supply of prime candidates for the armed forces over the next eight years. The problem is exacerbated because the military services plan to be increasingly selective about the young men and women they recruit for the nation's armed forces. If the services try to compete for those prime candidates by more intensive recruiting and by offering better pay incentives for recruits, they could add billions of dollars to the defense budget in 1985 without adding in any way to military strength. Some increases in recruiting budgets are already being sought. The costs of maintaining present service policies could, in fact, rise so sharply that a return to the draft would be seriously proposed.

Major changes in the services' manpower policies, however, would permit the United States to sustain the all-volunteer force without significant increases in the costs of defense manpower. One broad set of options could enable the services to achieve a desired level of selectivity in choosing new recruits by reducing the number of recruits they need. The major factors in this reduction--increased reenlistments and decreased loss rates among first-term personnel--have already been discussed. The services could also increase utilization of women and civilians and make other changes that reduce the annual need for inexperienced recruits. Adoption of these options actually would reduce costs over the next eight years and would meet service manpower needs even under low unemployment rates in the 1980s.

Under a second set of options, the services would maintain their high rate of turnover in the force but would be less selective in accepting new recruits. Under existing policies more than 40 percent of young males are ineligible for military service and the pool is further reduced by screening before enlistment. If the services were less selective about recruits, policies that encourage first-term discharges of marginal performers could

be used to maintain the effectiveness of the military forces. If the economy nears full employment after 1980, then the economic competition for military recruits will lead to substantial reductions in enlistments of those with high school diplomas and increases in enlistments of those with low test scores, although the services still would be able to meet their basic manpower needs.

This chapter begins with a projection of the military recruiting problem--the supply and demand for high-quality recruits from 1977 to 1985. It follows with a discussion of possible solutions to the recruiting problem and an identification of both short-term and long-term policy options.

THE RECRUITING PROBLEM: SUPPLY AND DEMAND

The target population for the 400,000 to 430,000 new enlisted men and women the military services will seek each year for the next five years ranges from 17 to 21 years of age. The majority of new recruits will be in the 18- and 19-year-old bracket.

Within the target population, mental and physical disqualifications narrow the pool of potential recruits. Competition from civilian employers, and colleges and universities, narrows the pool even further. Within this available group, the number of males of preferred quality--high school diploma graduates (HSDG) scoring in mental categories I-III on service-administered aptitude tests--is smaller still. 1/ This is the supply-limited category of recruits. All other categories--female high school diploma graduates, and males who either lack a high school diploma or score in mental category IV--are in excess supply. In recruiting, the military services have sought to raise the percentage of high-quality recruits and lower the percentage of

1/ All potential male recruits take the Armed Services Vocational Aptitude Battery (ASVAB), which has replaced the Armed Forces Qualification Test (AFQT) as the principal test for new recruits.

personnel who do not have high school diplomas or are in category IV.

In fiscal year 1974--the first year the all-volunteer force met its recruiting goals--58 percent of male military recruits were high school graduates and 11 percent were in mental category IV. 2/ By fiscal year 1975, the services were taking in 63 percent high school graduates and 7 percent in category IV. And by fiscal year 1976, high school graduates constituted 65 percent of male enlistees and mental category IV had fallen to 5 percent. 3/

While this success was due in part to improvements in recruiting techniques, the more important causes may have been demographic and economic. During the first half of the decade, the population of military-age youths increased. Of even more significance, unemployment grew from 5.5 percent in the summer of 1974 to nearly 9 percent a year later, reaching the highest levels since before World War II.

The military services will find it increasingly difficult to continue their recruiting successes in the next five to ten years for several reasons. First, the population of military-age youths will shortly level off; during the 1980s it will decline sharply. 4/ Second, the economy is expected to improve--although perhaps slowly--with a resulting decline in unemployment.

2/ The term "high school graduate," as used in this paper, refers to personnel with high school diplomas and excludes persons with certificates of general equivalence.

3/ Source of data: Manpower Research and Data Analysis Center (MARDAC), Office of the Secretary of Defense.

4/ The Soviets will experience the same population trends as the United States during the 1980s and, because the Soviets already utilize such a high percentage of available manpower, there may be pressures to reduce military manpower in the Soviet Union as well as in the United States.

Third, military pay and benefits are not expected to increase as rapidly as in the past ten years, and under current formulas are projected to lag behind increases in private-sector wages available for new high school graduates. The recruiting problems of the services are further exacerbated by desires for higher percentages of high school graduates than prevailed even in the recession years of 1975-76. The Army has a long-term goal of 68 percent high school graduates; the Navy and Marine Corps are seeking about 75 percent; and the Air Force has been able to maintain 90 percent graduates throughout the last few years.

The results of a comparison through fiscal year 1985 of enlisted recruiting objectives and the expected supply of recruits are presented in Figure 1 (and, in detail, in the Appendix to this volume). 5/ The salient findings are these:

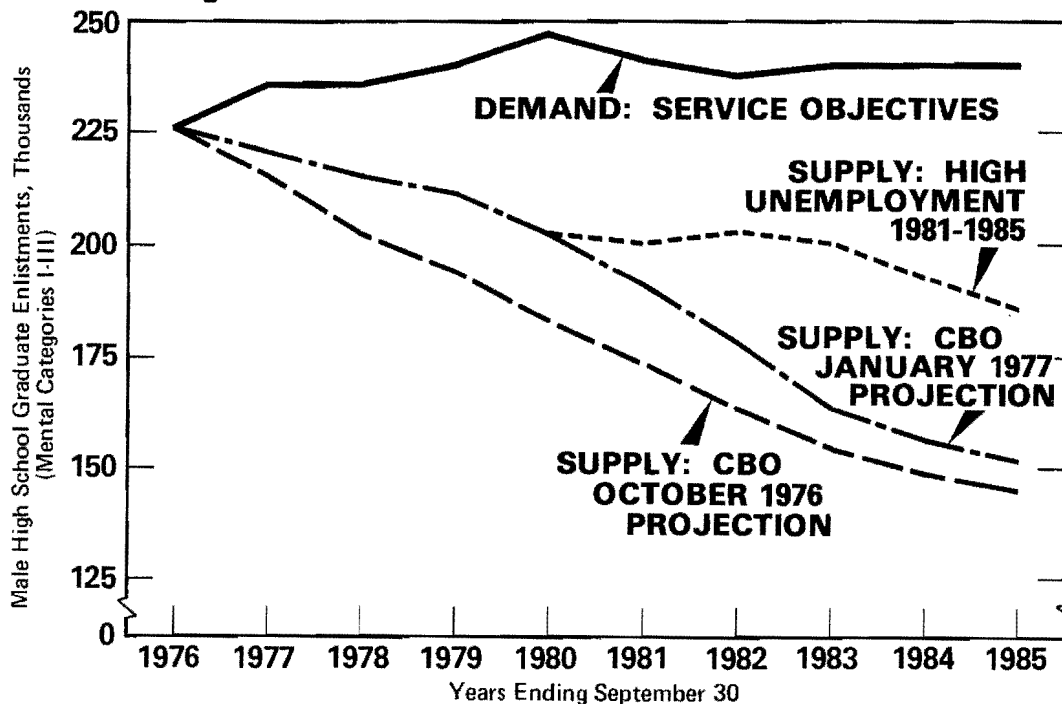
- o Although the military services plan to increase quality, by taking in more of the supply-limited category of recruits than during their best year to date (fiscal year 1976), the supply of such personnel will become increasingly restricted due to changes in population and the economy.
- o The number of male high school diploma graduates in categories I-III who would consider military careers will decline steadily during the remainder of this decade if the unemployment rate declines as projected by CBO's October 1976 forecast.

5/ Long-term projections of recruit supply contain numerous opportunities for errors: in economic projections, in estimated effects of pay and unemployment, in factors omitted from the analysis, in changing attitudes toward military service, and in a host of other imponderables.

- o Beyond 1980, the supply picture improves only under pessimistic assumptions about the economy. Even at 7.5 percent unemployment, the services will then fall about 20 percent below their projected recruiting goals for high school graduate recruits in mental categories I-III.
- o At 4 percent, the services will fall more than 40 percent shy of their recruiting goals in the supply-limited category by 1985.

Figure 1.

Projected Demand and Supply for Prime Recruiting Candidates, 1976-1985
Total Department of Defense



This forecast was based on two economic projections prepared by CBO for the fiscal year 1977-1982 period, extended out to fiscal year 1985. ^{6/} The initial forecast, made in October 1976, is the more optimistic and shows unemployment falling steadily from 7.9 percent for the year ending September 30, to 6.1 percent for fiscal year 1978, and to 4 percent by the end of fiscal year 1982. Real gross national product (GNP) grows at 5.2 percent per year. The later forecast, made in January 1977, assumes no fiscal stimulus by the federal government to combat the recession and takes account of the most recent evidence on the path of the economy. Unemployment falls only to 7.3 percent by fiscal year 1978 and to 5.1 percent by fiscal year 1982, but declines to 4.6 percent for fiscal years 1983-1985. Under this projection, GNP grows at less than 4.5 percent for each of the next three years. Under both projections, federal pay (and hence military pay) grows slightly faster than inflation but less than the projected increase in manufacturing wages. Figure 2 shows trends in population from 1976 to 1985, and under both economic projections, it shows the trends in unemployment and in the ratio of military to civilian pay.

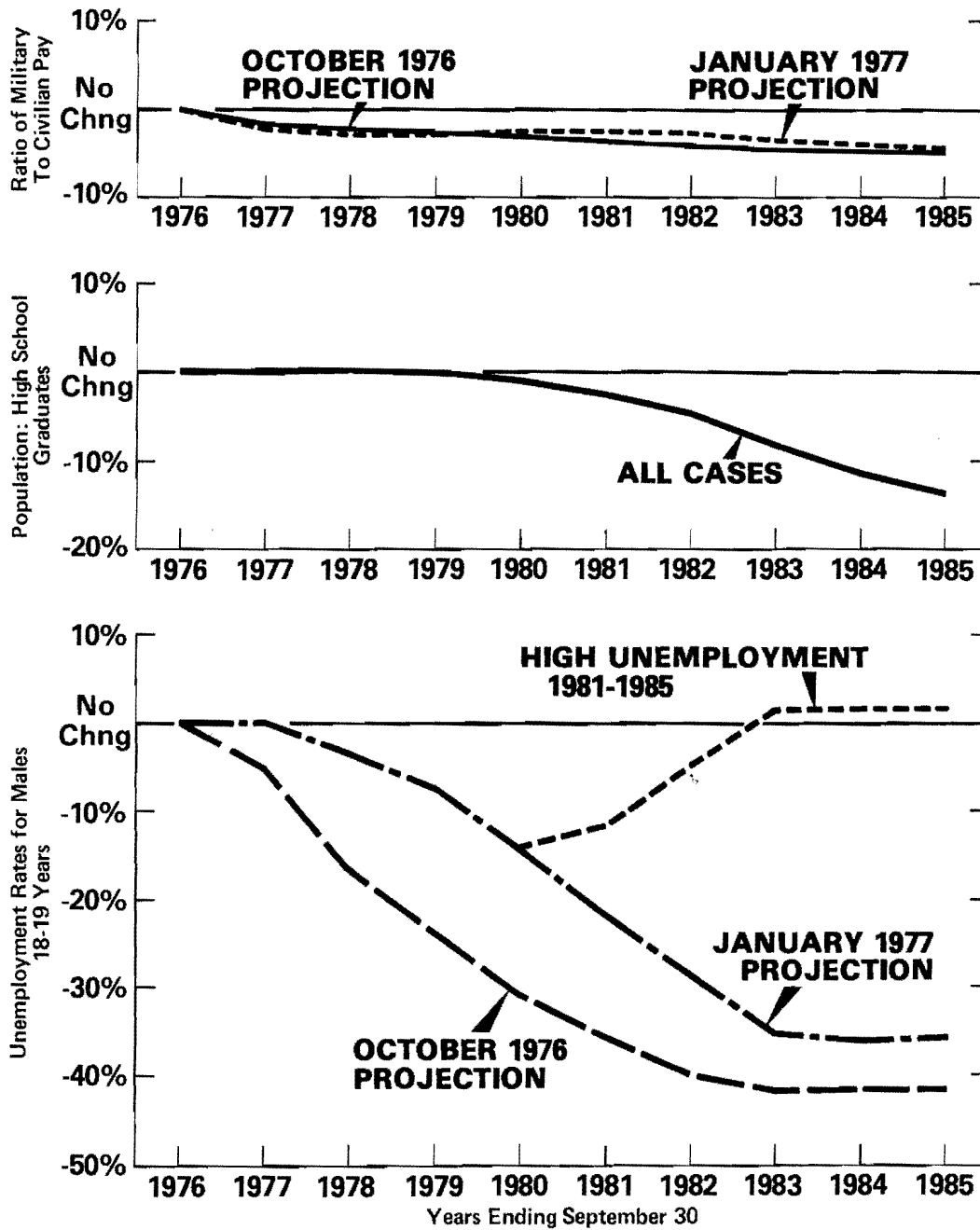
This projection of the supply of high-quality recruits may represent a pessimistic or, indeed, "worst case" picture of military recruiting in the 1980s. Several factors may make military recruiting more successful than this analysis indicates:

- o Unemployment rates may remain above full employment rates (near 4 percent) for a longer period of time. At 7.5 percent, as shown in Figure 1, projected shortages are about one-half as great as at a 4 percent rate of unemployment. Consequently, a high unemployment rate of 7.5 percent is shown in Figures 1 and 2.

^{6/} The declining trend in the population of youths eligible for service continues beyond 1985. The analysis stops at 1985 because other uncertainties, including the size of military forces, appear to multiply and because policies adopted in fiscal year 1978 will have minimal effect beyond 1985.

Figure 2.

Pay, Population, and Unemployment Projection, 1977-1985



- o Some estimates show smaller effects of unemployment rates on enlistments than projected here. Under these alternative estimates, low unemployment rates would cause a smaller reduction in enlistments.
- o The percentage of high school dropouts may decline, which would increase the population of prime enlistment candidates.
- o Future enlistments may be understated because of other factors, including better designed and more productive recruiting and advertising programs, more favorable attitudes toward military service, and various types of forecasting errors.

But conservative projections of recruiting are useful in establishing a maximum probable long-term shortfall in recruits and in testing the ability of the services to cover projected shortages under relatively adverse conditions. Thus, the all-volunteer force may be in a healthier condition than Figure 1 indicates. It is also possible that the competition for a shrinking number of new high school graduates among colleges, employers, and the military could drive down unemployment rates and raise wage levels for young workers even beyond the projections in Figure 2.

POSSIBLE SOLUTIONS

The growing shortfall of high-quality male recruits projected for fiscal years 1977 to 1985 has already provoked a response from the military services. Three services will request reprogramming authority to increase recruiting budgets in fiscal year 1977, and all four services are seeking higher funding for recruiting in the fiscal year 1978 defense budget. The Congress will be faced with a decision on these requests in this session.

In addition to these immediate issues, recruiting poses a serious long-term problem, especially if the effects of low unemployment and a dwindling population of new high school graduates combine to limit military enlistments. Yet the services--and the Congress--are not without means to attack this problem. For instance,

additional recruiters, increased advertising, and other actions can increase the supply of persons wanting to enlist. Military pay, either in the form of raises or specially tailored bonuses, represents another way of increasing enlistments. The services can decide, moreover, whether an increased percentage of high school graduates is necessary to man the forces during a period of lean recruiting. The services also have considerable capability to reduce the number of recruits needed, and some of these options also permit reductions in manpower costs. Increased reenlistments, reduced attrition rates, and increased utilization of women and civilian personnel all have the potential of reducing long-term shortages in enlisted recruiting. In addition, any of these long-term actions could also be used to eliminate recruit shortages in fiscal year 1978 as well.

Recruiters and Advertising

In fiscal year 1976, the average cost of recruiting each enlistee was \$1,240. This included the cost of recruiters and advertising, enlistment bonuses, and the costs of stations that examine and process recruits. This average figure is misleading. Most recruiting effort goes to bringing in male high school graduates in the top three mental categories, and these accounted for only about 55 percent of total recruits in fiscal year 1976. The average recruiter brings in 18 of these high-quality enlistees per year in the Army and similar numbers in the Navy and Marine Corps. But studies also indicate that each additional recruiter in these three services brings in only between four and seven additional enlistees per year. ^{7/} One reason is the

^{7/} See, e.g., the analysis in David W. Grissmer et al., "An Econometric Analysis of Volunteer Enlistments by Service and Cost Effectiveness Comparisons of Service Incentive Programs," General Research Corporation, OAD-CR-66 (processed: 1974). The results were updated and are cited in J. L. James, "Recruiting Projections for the Armed Services," General Research Corporation (draft: 1975), Appendix A.

intensity of the recruiting effort already underway. There are 18,555 military personnel assigned to recruiting duty in the Defense Department, of whom two-thirds are so-called "production" recruiters. Any additional recruiters must be assigned to locations with limited recruiting potential or to areas where they would be competing with recruiters already at work.

Under these circumstances, the cost of recruiting an additional high school graduate in the top three testing categories for the Army is about \$5,500 in 1977 dollars. In the Navy and the Marine Corps, the costs may be closer to \$3,000 per high-quality recruit because of greater recruiter productivity in the Navy and lower costs per recruiter in the Marine Corps. This also would intensify competition among the services for recruits. This same analysis places a very low cost--about \$1,000--on additional recruits in the Air Force because of the Air Force's superior recruiting position and smaller recruiter force. In the future, however, additional Air Force recruits may come disproportionately from the other services. In any event, the Army cost may be the key determinant because of the size of the Army's quota, the magnitude of its projected deficits, and because inter-service recruiting competition can drive up the overall cost of recruits for DoD.

Less is known about other recruiting resources. Recruiter "aides" are junior enlisted personnel who are returned to their local communities as temporary assistants to recruiters. Studies have differed on whether these aides are more or less effective per dollar than full-time recruiters, but this is a growing program, with the Army seeking large increases in these personnel for fiscal years 1977 and 1978. 8/ Advertising has

8/ Favorable results based on an earlier program in the Army were reported in R. Babiskin et al., "Cost Effectiveness of Army Recruiting and Canvassing Programs during Fiscal Year 1974," General Research Corporation (processed: 1974), p. viii. But updated results, which indicated recruiter aides were less effective than regular recruiters, appear in D. F. Huck, "Review of Army's Current Position in Meeting FY 1976 Recruiting Objectives," General Research Corporation (processed: 1975), pp. C-3 to C-5.

grown in importance in recent years, with nearly \$90 million slated for DoD in fiscal year 1977 and further increases contemplated in reprogramming actions. The effects of advertising are difficult to measure. Although there is no available evidence to show that advertising is more productive than adding new recruiters, the allocation of the recruiting budget between advertising and other resources inevitably must be based primarily on judgments about what constitutes a balanced recruiting program.

The CBO analysis suggests that recruiting costs for each additional high-quality male recruit during fiscal year 1977 will be about \$5,500. This conclusion might be disputed by the services, but the Army, in requesting \$60 million ^{9/} reprogramming authority for fiscal year 1977, projected that only about 5,000 additional high school graduates would be enlisted, at a computed cost of \$12,000 per additional recruit. Moreover, large increases in recruiting resources will lead to further increases in the cost per additional recruit, as the recruiting market becomes progressively more crowded with recruiters and advertising. ^{10/} As the cost per recruit rises, the attractiveness of increased recruiting budgets falls sharply. Beyond a certain point, recruiting and advertising have a limited effect on military enlistments.

Military Pay Options

Pay has a significant and positive effect on military enlistments. Probably the most cost-effective use of pay to increase enlistments is through the payment of the selective enlistment bonus. These bonuses, currently as high as \$2,500 for enlistees who successfully complete training in hard-to-fill specialties, provide a flexible and efficient program of pay incentives for the military

^{9/} The reprogramming cost would actually be \$66 million, counting military personnel costs.

^{10/} Under one estimate, a 25 percent increase in recruiters would nearly double the cost per additional recruit. D. F. Huck (1975), op. cit., p. C-8.

services. The incentive can be awarded only in the specialties needed, only at the times needed, and only to new enlistees. Thus, an expanded bonus program, if properly managed, would prove far less costly than an equivalent pay raise extended to the entire force. Further, bonuses are a highly visible element of the military pay system and help motivate a trainee to successfully complete initial training.

One study found that "a \$1,500 [combat arms] enlistment bonus...is more economical than increases in recruiters, or advertising, or a general pay increase." ^{11/} However, this and other studies find that the effects of bonuses depend on which specialty offers the award, the amount of the award, and whether other specialties also receive awards. Bonuses are not always more economical than recruiters or advertising, but bonuses should suffer less from the problems of diminishing returns that limit the effectiveness of large increases in recruiting or advertising budgets. Thus, to secure large increases in enlistments, bonuses will be a more economical program than large increases in recruiting resources.

Other pay options also merit consideration. In forecasting enlistments, the decline in military pay relative to civilian blue-collar earnings is taken into account. The differences will amount to between 3 and 6 percent of earnings by 1985. A new pay raise mechanism that provided raises for military enlisted personnel equal to those in competing civilian occupations would be fair and equitable, but it would also be an expensive way to increase enlistments. The cost may exceed \$70,000 per additional enlistee. Only if the services want to increase both enlistments and reenlistments at every point of the career do across-the-board pay increases appear cost-effective. And such proposals may be best considered along with the proposed salary and retirement reforms discussed in Chapter IV.

^{11/} D. F. Huck et al., "An Evaluation of the Effectiveness of U. S. Army Enlistment Bonuses," General Research Corporation, OAD-CR-154 (processed: 1976), Vol. 1, p. S-27.

The Quality Issue in Recruiting

The key to recruiting in the era of the all-volunteer force has been not the number of persons recruited but the education and intelligence levels of recruits. The concept of "quality" will become even more important as recruiting difficulties intensify. Moreover, the concept of recruit quality is subject to misunderstanding. There is no magic formula for determining what makes a good soldier--not high school graduation, not mental abilities. Motivation, desire, and capacity for leadership are equally important but very difficult to measure during recruiting. Moreover, truck drivers and combat soldiers require skills different from electronic equipment repairmen or computer programmers, and industrial psychologists have determined that for less intellectually demanding jobs, the most intelligent persons can be inferior performers.

Despite difficulties in defining quality, the percentage of recruits with high school diplomas and high mental test scores is widely used as an indicator of recruit quality. This indicator is easily measured at the time of enlistment and can be validated, to some degree, by later performance. Bearers of high school diplomas have far lower attrition rates and a lower incidence of courts-martial and disciplinary actions than other recruits. Of high school graduates who entered the Army in fiscal year 1974, 21 percent left in the first 24 months of service compared to 43 percent of non-graduates. Mental test scores are useful predictors of success in technical training. Performance on mental tests, however, cannot be the only guide to future performance. There are numerous non-graduates or low-aptitude personnel who have made outstanding soldiers, sailors, marines, and airmen. Yet higher attrition rates and greater likelihood of desertion and disciplinary actions make those personnel poorer risks than high school graduates. In establishing policy, the greater costs associated with such personnel need to be compared with the benefits derived from having a greater supply of personnel.

The services have attempted to limit personnel in category IV (percentiles 10 to 30) to 10 percent or less

of total enlistments, although the basis for these limits is nowhere clearly spelled out. 12/ The Army and Marine Corps have goals of 10 percent or less in category IV; the Navy goal is 6 percent, while the Air Force has consistently maintained less than 1 percent in category IV. In the 12 months ending September 30, 1976, category IV enlistees totaled less than 6 percent of total male enlistees. This emphasis on limiting category IV enlistments is not fully justified by data on recruit performance, studies of quality requirements, or historical data from the draft years. First, attrition rates of category IV high school graduates, while higher than those of category I-III high school graduates, are lower than attrition rates for any group of non-graduates, even categories I-II. 13/ Second, a study of service quality requirements by the Department of Defense estimated a maximum category IV percentage for 1974 enlistments of between 15 and 18 percent for total DoD enlistments. 14/ Third, between 1955 and 1964, fully 18 percent of all DoD enlisted accessions were in category IV--far higher than any percentages achieved under the all-volunteer force.

One possible reason for restricting enlistments in mental category IV is the desire to maintain racial representativeness within the military services, and blacks constitute a substantial percentage of category IV enlistments. In both the Army and the Marine Corps, the percentage of black enlisted personnel (23 and 17, respectively) exceeds the percentage in the United States as a whole. In fiscal year 1976, blacks represented 46 percent of category IV high school graduate enlistees and

12/ Personnel in category V (percentiles 0 to 9) are not eligible for military service.

13/ Source: MARDAC.

14/ Central All-Volunteer Force Task Force, "Quality Accession Requirements (A Report on the Qualitative Accession Needs of the Military Services)," (processed: 1972), p. 39. DoD totals calculated from service percentages.

only 17 percent of total enlistees. ^{15/} Options, discussed below, that would substitute category IV high school graduates for non-graduates almost certainly would increase the percentage of military personnel who were black.

Since the ability of the services to minimize category IV enlisted personnel has exceeded objectives in recent years, the main emphasis has focused on high school diploma recruits. The Army, Navy, and Marine Corps are all attempting to raise the percentage of high school graduates above the relatively high rates of 1975 and 1976. The Air Force has consistently attained 90 percent high school graduates since 1975.

TABLE 8. MALE HIGH SCHOOL GRADUATE ENLISTEES
(in percents)

	Army	Navy	Marine Corps	Air Force
<u>Targets</u>	68	76	75	90
<u>Actuals</u>				
Fiscal Year 1976	56	75	61	89
Fiscal Year 1975	55	69	52	90
Fiscal Year 1974	46	66	46	85

^{15/} Source: MARDAC. But this result varies somewhat by service. Only 24 percent of Navy enlistees were black who were high school graduates in mental category IV, and only 9 percent of total Navy enlistees were black.

As noted, high school graduates are favored because diploma-holders, on average, have been found to cause fewer disciplinary problems and lead to lower attrition rates. Although no military jobs require a diploma, per se, graduates are deemed cost-effective because lower attrition rates mean that fewer enlistments and less training are needed to produce a given number of trained personnel. The differences in attrition rates are borne out by data from each of the services.

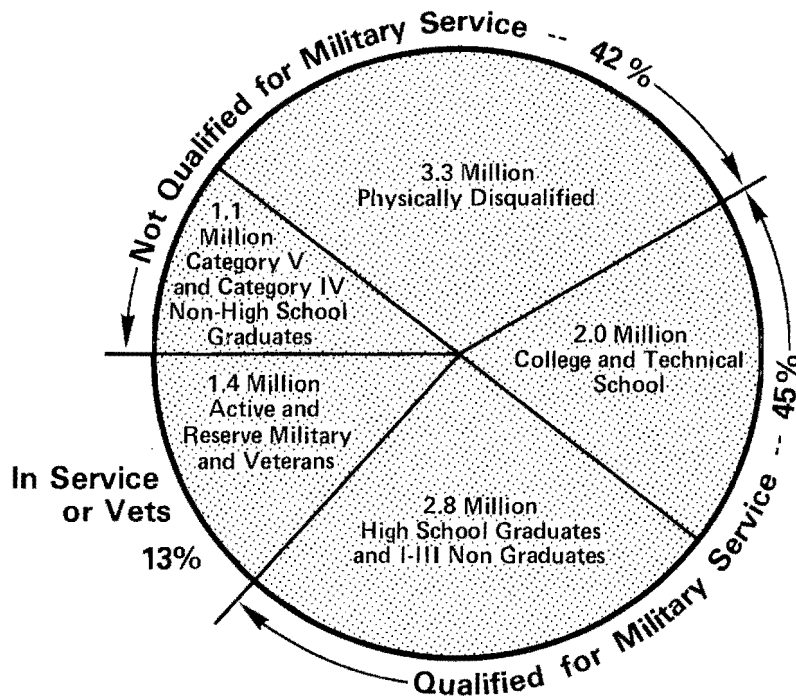
An Army study has attempted to correlate costs with increased enlistments of high school graduate recruits.^{16/} The study shows that a force composed of 68 percent high school graduates costs less than a force composed of 46 percent high school graduates. The savings were about \$5,500 per high school graduate enlistment. The study concluded that these savings result from a reduction of the need for more than 8,000 personnel, and from reducing costs related to gains and losses of personnel. CBO estimates suggest that for DoD as a whole, and quite possibly for the Army, the savings may be only about one-half that total. If savings are just equal to costs, then the intangible benefits derived from having somewhat better personnel--perhaps greater productivity, certainly less turbulence attributable to disciplinary incidents--would tip the scale in favor of the high school graduates. These intangible benefits, for instance, are just as strong or stronger in the case of higher reenlistments. Yet if enlistments decline as projected over the next several years, the costs of recruiting an additional high school graduate could rise sharply, and the case for additional high school graduate enlistments would become progressively weaker.

Many who are not high school graduates, or who fall into mental category IV, are qualified for enlistment, although not in the preferred category. Others are simply considered ineligible. Figure 3 shows a breakdown of the 17-to-21-year-old male population, as presented by the Army Recruiting Command. Of the 10.6 million

^{16/} Unpublished study prepared by the Office of the Assistant Secretary of the Army (Manpower & Reserve Affairs), 1976.

Figure 3.

**Distribution of 10.6 Million Males, Ages 17-21,
Fiscal Year 1977 Estimates.**



Source: U.S. Army Recruiting Command.

males in that age group, 10 percent are ineligible either because they are in category V, or are in category IV but do not hold high school diplomas. The lion's share of those considered ineligible are disqualified for physical reasons. Thus, nearly half the total population is treated as ineligible for military service. In the large group of physically disqualified, the largest single cause is failure to meet weight standards.

Despite relatively high standards of public health and despite the quality of U.S. education, the nation disqualifies a higher percentage of its males from military service than virtually any other country. In the Soviet Union, for instance, about two-thirds of

the male population currently enters military service. ^{17/} Furthermore, the one-third that avoids service includes eligible males who receive special deferments or exemptions. The French and other allies with universal conscription enlist similar proportions of their young males.

Studies have generally found U.S. physical standards to be more restrictive than other countries'. ^{18/} While no study has compared U.S. and foreign practices on all reasons for military disqualification, the estimated disqualification rate of 42 percent among Americans clearly results from basic differences between U.S. manpower policies and those of allies and potential adversaries.

Despite conflicting opinions about minimum standards for military service and about ideal proportions of high school graduates and high-aptitude personnel, there is a consensus in the Congress, the Department of Defense, and elsewhere that the armed forces should be manned by able and well-trained personnel. The House Committee on Appropriations wrote into its fiscal year 1974 defense appropriations bill a minimum percentage for high school graduates and persons with general equivalency certificates. Thus, trends in recruit quality have been carefully monitored in both the Congress and the Executive Branch. Even so, there do appear to be alternatives to the high standards set by the military services for 1977-1982. For example:

- o Setting fiscal year 1974 recruiting performance as a minimum standard reduces the need for high school graduates in mental categories I-III by 30,000 per year, or nearly 15 percent. The General Accounting Office has reported

^{17/} Murray Feshbach and Stephen Rapawy, "Soviet Population and Manpower Trends and Policies," (processed: Department of Commerce, 1976), p. 36.

^{18/} David S. C. Chu and Eva Norrblom, Physical Standards in an All-Volunteer Force, Rand Corporation, R-1347-ARPA/DDPAE, 1974.

that the quality of recruits in the fiscal year had "probably not decreased" in comparison to recruits during selective service years. 19/ The reduction in demand includes 3 percent more total enlistments due to greater first-term attrition rates.

- o More high school graduates could be recruited in mental category IV without exceeding either draft-era experience or the recommendations of previous studies of minimum category IV requirements. Lowered standards would raise total enlistments by 3 percent but would also reduce requirements for the supply-limited categories of enlistments by 45,000 per year, or slightly more than 20 percent. Table 9 shows how service targets and the revised targets compare for each of the services. This option would also increase the percentage of black enlistments.
- o Finally, the high rate of physical disqualification can be reduced somewhat by extending maximum and minimum weight limits by 10 percent. This will increase eligible recruits by approximately 5 percent. Costs due to greater attrition of overweight and underweight volunteers have been estimated at less than \$1,000 per additional enlistee. 20/

Reductions in Male Enlistment Requirements

The gap between the supply of, and demand for, high-quality enlistees also can be closed by reducing the number of male enlistees sought by DoD. The demand for trained manpower depends on the U.S. defense posture, a demand that is met by military and civil service personnel, and by private contractors; by officers and enlisted personnel; and by male and female military personnel. Of these groups, only male enlistees with high school diplomas are in short supply.

19/ "An Assessment of All-Volunteer Force Recruits," FPCD-75-170 (processed: February 27, 1976).

20/ Chu and Norrblom, op. cit., pp. 45-46.

TABLE 9.

ALTERNATIVE RECRUIT QUALITY STANDARDS

	Army	Navy	Marine Corps	Air Force
	High School Graduates (in percents)			
Service Targets	68 <u>a/</u>	76	75	90
Alternative Limits:				
Fiscal Year 1976 Performance	56	75	61	89
Fiscal Year 1974 Performance	46	66	46	85
Increased Cate- gory IV	48	69	47	87
	Mental Category IV Enlistments (in percents)			
Service Targets	10	6	10	1
Alternative Limits:				
Fiscal Year 1976 Performance	8	4	3	1
Fiscal Year 1974 Performance	19	6	8	5
Increased Cate- gory IV	20	13	18	13

a/ Long-range target. Current plans call for between 55 and 60 percent high school graduates.

The need for enlistees depends largely on the size of losses from the existing pool. Thus, requirements for male enlistees without prior service can be reduced if other categories of labor are more intensively utilized, if losses are reduced in the male enlisted force, or if, in fact, the productivity of existing manpower can be increased.

Several options can be identified that will reduce requirements for male recruits during the period from 1977 through 1985 and beyond. For the most part, these are long-term options, either because they will take effect slowly or because careful planning and evaluation is required before implementation. The four specific areas to be discussed include: (1) reduced enlisted turnover through improved retention and lower first-term attrition; (2) efficiency improvements, chiefly in the training area; (3) greater utilization of female personnel; and (4) potential substitution of civilian for military personnel.

Reduced Turnover. The high projections of service needs for recruits are due, in part, to DoD's failure to achieve the reduced turnover rates projected for the all-volunteer force and, in particular, to a failure of the Army and Navy to achieve the loss rates agreed to under the new enlisted personnel management system in DoD. Increased retention, principally in the Army (chiefly through reenlistments of those who have left the military), and reduced first-term attrition throughout DoD will lead to substantial reductions in enlisted force turnover and enlistment requirements. If reenlistments or prior service enlistments were increased by 20,000 and DoD guidelines on first-term attrition were followed, the need for new enlistments could be reduced by as much as 11 percent in fiscal year 1978. Eventual reductions would total 15 percent annually. If the services were able to achieve the attrition rates that prevailed in fiscal year 1973, savings in fiscal year 1978 could rise to 15 percent and long-term reductions in enlistments to nearly 20 percent. A gradual implementation of new management tools may be necessary to reduce attrition, but it is important that increased reenlistments, with powerful long-term effects, begin immediately.

Increased retention may tend to increase costs at the same time that lower rates of first-term attrition reduce costs. But the intangibles may bring the costs and benefits of the two options closer together. Reduced attrition goals will place a premium on leadership by non-commissioned and junior officers and will make quality control more difficult, all tending to reduce effectiveness. Increased retention, on the other hand, provides the services with experienced journeyman-level personnel who should be more productive than the first-term personnel they replace. Thus, increased retention will tend to increase productivity and may make further manpower reductions possible.

Training Efficiencies. Efficiencies that permit the services to man the forces with fewer personnel also reduce enlistment requirements. Reductions in training and training support identified in Chapter II would reduce military manpower in the Army, Navy, and Air Force by some 34,000 persons. Reductions in turnover rates would reduce training loads and lead to a further reduction of training support manpower of between 6,000 and 9,000 military personnel. Male enlistment requirements could fall sharply for a period if these efficiencies are taken at one time, and this would have a major effect in reducing temporary shortages of volunteers. Enlistment requirements will fall by about 10,000 enlistees. About three-fourths of this reduction will occur in the Army, where shortages are expected to be greatest.

Utilization of Women in the Military. The number of women in military service will have increased from 30,000 in 1965 to 120,000 by the end of 1977. The services contend that they are near the maximum strength of female personnel because of limitations on women aboard ship or in "front-line" combat units and because of physical strength requirements. One major factor is the need to provide a rotation base for personnel aboard ship or deployed in combat units. This base provides jobs on shore or in the United States for personnel between assignments on board ship or deployed overseas.

Many observers disagree with service limits in the utilization of female personnel. They cite the low percentage of total personnel who serve in combat specialties or in other occupations normally closed to women. An increase of 100,000 women over a period of several years could have a significant effect on recruiting, and yet women would still constitute only 10 percent of the total military force.

An increase in female enlistments by 20,000 per year would permit an equal reduction in male enlistees. Moreover, the increase in female personnel of about 100,000 could be phased in over a period of more than five years. Currently, there is an excess supply of female applicants--all female enlistees are high school graduates and almost all fall in the top one half of the population in terms of test scores. Using these yardsticks as measures of quality, increased use of women in the military would raise the quality of the enlisted force.

This option should add little or nothing to costs per additional enlistee. Female attrition rates have dropped dramatically in recent years, while male rates have increased. Some additional funds will be necessary for barracks construction and for pregnancy leave and benefits. But women personnel are less likely to have dependents than men and, consequently, the costs of transferring personnel may be reduced.

Civilian Substitution. About one-third of the total DoD labor force consists of civilian employees. DoD already has begun to make greater use of civilian personnel, as shown by the fact that reductions in the force of military personnel from their strengths prior to the Vietnam War have been larger than reductions in the numbers of civilian workers. One reason for this apparent change in emphasis is that military personnel may be considerably more expensive than civilians. One recent study found differences as great as 50 percent in comparing personnel of approximately equivalent

grades. 21/ The comparison between military personnel and private-sector employees would show a similar spread.

The Defense Department has indicated that 95,000 military personnel are serving in commercial or industrial activities. These personnel, in principle, could be replaced by civilians. 22/ Conversion of one half of these billets to civilian or, perhaps better, contractor personnel would reduce military end strengths by 50,000. The long-term reduction in enlistment requirements would be about 10,000 per year, and this reduction is assumed annually for fiscal years 1978 to 1985. However, short-term reductions could be larger for some years if hiring of civilians proceeds at a rapid pace.

POLICY OPTIONS, 1977 TO 1985

The comparison of enlistment objectives with projected supply shows a growing shortage of high-quality enlistments during fiscal years 1978 to 1985. (See Figure 1 and Table 10.) The magnitude depends on the path of the economy. Under either the October 1976 high economic path projected by CBO or the January 1977 low economic path, shortages should be relatively manageable through fiscal year 1979. With extra funds for recruiting, advertising, and enlistment bonuses, as requested by the services for fiscal years 1977 and 1978, recruit quality objectives are likely to be attainable. However, at least three courses of action are open to the Congress in dealing with the requests for additional funds:

21/ "Manpower Costs," by ICF, Inc., in Defense Manpower Commission Staff Studies, Volume III (Government Printing Office: 1976).

22/ "Annual Inventory of Commercial or Industrial Activities and Contract Support Services," prepared by Air Force Data Services Center, undated.

- o Provide the additional funds requested for fiscal years 1977 and 1978 and enable the services to meet their quality objectives.
- o Turn down the request for extra recruiting funds and press the services to find ways to reduce the number of recruits needed. These reductions, which can occur in any of the ways discussed above, would permit the services to achieve the desired enlistment quality in fiscal year 1978.
- o Turn down the request for extra funds with the result that the services will take in fewer than desired high school graduate enlistments and personnel in categories I-III in fiscal year 1978. Although they fall below objectives, the services will come close to fiscal year 1976 recruiting performance (unless unemployment rates decline rapidly) and will far exceed fiscal year 1974 results.

TABLE 10. PROJECTED ANNUAL SHORTAGES OF MALE ENLISTEES
(HIGH SCHOOL GRADUATES IN MENTAL CATEGORIES
I-III), TOTAL DEPARTMENT OF DEFENSE

	Fiscal Years			
	1978	1979	1982	1985
High Economic Path: CBO October 1976 Projection	33,000	46,000	74,000	95,000
Low Economic Path: CBO January 1977 Projection	21,000	29,000	60,000	88,000
High Long-term Unemployment: 7.5 Percent After 1982	21,000	29,000	35,000	53,000

In the long term, recruiting shortfalls will be more severe. Both the high and low projections show unemployment slipping below 5 percent by fiscal year 1982 and leveling off at rates between 4 and 4.5 percent. If the economy does, in fact, approach full employment rates by fiscal year 1985, recruiting shortfalls in that year would approach 100,000. Unemployment rates more comparable to current levels would reduce the shortage in fiscal year 1985 to about 50,000 high-quality recruits. The three options identified for fiscal year 1978 also represent ways to solve the long-term recruiting problem without reinstituting the draft: (1) achieving high quality, but with higher costs; (2) achieving high quality through reduced turnover; and (3) lowering quality without greatly increasing costs or changing turnover policies.

Under the economic projections, and under current manpower policies that encourage a high rate of turnover, the services can meet their recruiting objectives only if they sharply increase recruiting and advertising budgets and offer major pay increases to new recruits. Recruiting and advertising activities can be expensive and, moreover, are subject to rapidly diminishing returns. As a rough illustration, this discussion assumes that additional recruiting and advertising funds can produce--at most--an increase in enlistments of 15 percent, at a cost of \$300 million per year in 1977 dollars. ^{23/} This would more than cover shortages projected for fiscal years 1978 and 1979. In fact, the service requests for \$100 million to \$150 million in extra funds for fiscal year 1978 is about the right level to cover fiscal year 1978 shortages.

^{23/} Because of the large increase in funding, the marginal cost per recruit--\$7,600--is higher than the \$5,500 assumed for small changes in recruiting. This result, as well as the 15 percent maximum increase, is generally reflective of recruiting budget studies done for the Army and the Office of the Secretary of Defense by the General Research Corporation. See, e.g., Huck (1975), op. cit., p. C-8.

Beyond fiscal year 1979, projected shortages would require stronger pay incentives for enlisted recruits. Two examples show possible costs of such incentives. The less expensive, across-the-board pay measure would pay enlistment bonuses to each recruit with the proper education and test scores. Bonuses of \$4,500 in fiscal year 1982 and of \$10,500 per enlistee in fiscal year 1985 would be needed to eliminate projected shortages. The cost in fiscal year 1985 would be \$2.3 billion. Across-the-board pay increases, to let all personnel share in increased pay, would be even more expensive. If no increase in reenlistments were permitted, extra pay raises, totaling 38 percent by fiscal year 1985, would cost \$8.1 billion in 1977 dollars. Comprehensive pay and retirement reform, designed to permit the military services to recruit more easily, might be far less expensive. Hence the two pay options serve chiefly for purposes of illustration.

Selective Service

One alternative to this supply problem would be a return to the draft. A draft would assure supply while avoiding the cost increases indicated above. However, a return to the draft would impose higher costs of a different sort. For example, the draft would not automatically assure high-average-quality recruits. Under the most recent draft, each service had a higher proportion of category IV personnel than under the volunteer force, although more category I personnel also were taken in. Although a return to the draft could increase quality and could certainly prevent a major decline in recruit quality, the connection between the draft and the quality of recruits is neither strong nor direct. For example, an effort to control quality of draftees by taking only high school graduates could well lead to such undesired side effects as encouraging students to drop out of school.

Moreover, a return to the draft would revive the so-called "excess burdens" previously experienced. These include the effects of the draft on those not called to serve, the reluctance of employers to hire those possibly faced with a draft call, and pressure on individuals to take actions (such as early marriage, prolonged education, and even the cultivation of

disabilities) which might prevent their being called to serve. A lottery system, under which a few randomly selected individuals would be called, would eliminate some of these burdens but may also appear unfair because fewer than 10 percent of eligible males would be called to serve.

A return to two-year terms of service for conscripts would tend to increase turnover, training loads, and other forms of military personnel overhead, and would probably result in a requirement for more men and women in total to field military forces of the current size, thus adding to military manpower costs.

A return to conscription would open the door to one major cost-reduction option: cutting the pay of first-term personnel. Such savings could be used to increase military forces and readiness, or to reduce the overall level of the defense budget. Such a move would represent a decision to transfer some of the economic burden of defense from the defense budget, where it is borne by all taxpayers, to the relatively small number of individuals--fewer than 100,000 a year under present projections--who would be conscripted under a return to the draft.

Manpower Management

Options are not limited to awarding larger pay increases or to returning to the draft. The recruit shortages projected through fiscal year 1985 can be met in a variety of ways, some with relatively small increases in budget costs and some with actual savings. Table 11 sums up twelve specific options discussed previously and their effects on recruit shortages between fiscal years 1978 and 1985. Table 12 shows the annual cost or savings attached to each of these specific options. Although these options could be combined in many ways, three general courses of action typify the major manpower alternatives that do not involve a return to the draft. (Table 13 shows the effect on enlistments, manpower costs, and military end strengths for each of these alternatives from 1978 to 1985.) The three options, which can be exercised independently or in combination, are:

TABLE 11. SPECIFIC OPTIONS TO REDUCE RECRUIT SHORTAGES (MALE HIGH SCHOOL GRADUATES IN MENTAL CATEGORIES I-III), TOTAL DEPARTMENT OF DEFENSE

	Fiscal Years			
	1978	1979	1982	1985
<u>Increased Supply a/</u>				
1. Recruiting & advertising <u>b/</u>	21,000	29,000	27,000	27,000
2. Major pay increases <u>b/</u>	0	0	29,000	57,000
3. Physical standards	11,000	11,000	9,000	8,000
<u>Reduced Turnover c/</u>				
4. Increased reenlistment	15,000	19,000	24,000	28,000
5. OSD attrition proposal	10,000	10,000	10,000	10,000
6. Pre-1974 attrition	21,000	22,000	21,000	21,000
<u>Substituting for Male Military Personnel c/</u>				
7. 100,000 women	13,000	13,000	13,000	13,000
8. 50,000 civilians	6,000	6,000	6,000	6,000
<u>Training c/</u>				
9. Efficiencies	5,000	5,000	5,000	5,000
<u>Education and Mental Category</u>				
10. 1976 performance	14,000	11,000	12,000	10,000
11. 1974 performance	35,000	32,000	33,000	31,000
12. Increased category IV	50,000	48,000	49,000	47,000

a/ Assumes CBO January 1977 projections.

b/ Recruiting and advertising option plus pay increase option designed to eliminate shortages under CBO January 1977 economic projection.

c/ Assumes 63 percent of enlistments saved are high school graduates in mental categories I-III. This is consistent with service quality objectives.

TABLE 12. COSTS (+) AND SAVINGS (-) ATTRIBUTABLE TO
SPECIFIC RECRUITING OPTIONS, IN MILLIONS OF
FISCAL YEAR 1977 DOLLARS

	Fiscal Years			
	1978	1979	1982	1985
<u>Increased Supply</u>				
1. Recruiting & advertising	+160	+270	+300	+300
2. Major pay increases				
pay raises	0	0	+3,430	+8,070
bonuses	0	0	+950	+2,260
3. Physical standards	+10	+10	+10	+10
<u>Reduced Turnover</u>				
4. Increased reenlistments	-100	-110	-90	-30
5. OSD attrition proposal	-80	-80	-80	-80
6. Pre-1974 attrition	-160	-160	-160	-160
<u>Substitution for Male Military Personnel</u>				
7. 100,000 women <u>a/</u>	0	0	0	0
8. 50,000 <u>b/</u>	0	0	0	0
<u>Training</u>				
9. Efficiencies <u>c/</u>	0	0	0	0
<u>Education and Mental Category</u>				
10. 1976 performance	+20	+30	+20	+20
11. 1974 performance	+70	+80	+50	+50
12. Increased category IV	+70	+80	+50	+50

a/ Costs are very small.

b/ Savings would likely result, depending on method of implementation.

c/ Savings of \$275 million per year not attributable to recruiting.

TABLE 13. MILITARY RECRUITING OPTIONS AND ESTIMATED EFFECTS, IN MILLIONS OF FISCAL YEAR 1977 DOLLARS

	Fiscal Years			
	1978	1979	1982	1985
<u>Reduction Enlistment Shortages</u>				
Increased pay & recruiting	21,000	29,000	60,000	88,000
High quality/reduced turnover	83,000	84,000	88,000	88,000
Low quality/high turnover	91,000	97,000	95,000	88,000
<u>Manpower Costs in Millions of Fiscal Year 1977 Dollars</u>				
Increased pay & recruiting				
pay raises	+160	+270	+3,730	+8,370
bonuses	+160	+270	+1,250	+2,560
High quality/reduced turnover	-210	-210	-200	-140
Low quality/high turnover	+240	+360	+360	+360
<u>Changes in Military End Strengths</u>				
Increased pay & recruiting	0	0	0	0
High quality/reduced turnover	-75,000	-95,000	-117,000	-120,000
Low quality/high turnover	+6,000	+7,000	+2,000	+3,000

(1) Increased supply of high-quality enlistees. The option, already discussed, initially requires greater resources for recruiting (option No. 1) and, after fiscal year 1979, greater pay incentives for enlistees (option No. 2). Recruiting objectives are achieved by hiring more personnel in the open labor market.

(2) High-quality mix of enlistees and reduced turnover. The services would be able to achieve their quality objectives, or at least fiscal year 1976 levels, principally by reducing the number of male enlistees needed. This would require changes in physical standards (option No. 3), reenlistments (option No. 4), attrition (options No. 5 and 6), utilization of women and civilians (options No. 7 and 8), and training (option No. 9).

High quality and low loss rates clearly fit together as an option. The policies of high attrition rates for first-term personnel were introduced at a time (1973-1974) when recruit quality was lower than at present and was far below future service goals. With increased quality, attrition policies could be changed to reduce sharply first-term losses.

This option is also the least costly, since reduced turnover rates mean that fewer military personnel are needed to maintain effective military forces. Military personnel strengths can be cut by 125,000 by fiscal year 1985, with 50,000 slots filled by civilians. Savings of between \$140 million and \$210 million per year in 1977 dollars would result from these specific options. 24/ However, the potential reduction in the

24/ Savings from the high-quality and reduced-turnover option accrue because fewer personnel are needed to man the forces. If these savings are reinvested in the forces in order to increase military effectiveness, then savings will not be reflected in the defense budget. Enlistment requirements will also rise slightly.

demand for 83,000 high school graduates far exceeds any projected near-term shortages. Consequently, the services could gradually introduce these policy changes and not achieve their full effects until the 1980s. Alternatively, the greatest savings would occur if the full reductions in demand were taken immediately.

(3) Lowered quality mix of enlistees and continued high turnover rates. The services would maintain present policies but would take in fewer high school graduates and more category IV personnel. To eliminate almost all of the fiscal year 1985 shortage would require increased recruiting and advertising (option No. 1), changes in physical standards (option No. 3), increased utilization of women (option No. 7), and, especially, lowered recruit quality (options No. 11 and 12). Under this option the services would take in lower-quality personnel but would retain the high-attrition policies that permit the services to be selective about who remains on duty. Many high school dropouts become productive servicemen, but the risk is far higher than for high school graduates, and thus, special policies may be needed where the mix has fewer graduates.

Because lower-quality personnel have higher attrition rates, more personnel are needed to man the forces, and consequently, costs will increase. Higher recruiting costs could add \$300 million per year. The increase will average \$360 million per year under maximum use of this option. Again, the maximum use of low-quality personnel would initially reduce shortages by 91,000 personnel, far more than the 21,000 projected for fiscal year 1978. Thus the services could gradually accept lower quality and delay incurring the higher costs associated with this option. Alternatively, with higher recruiting budgets the services could avoid any quality reductions until fiscal year 1980, although this leads to larger budgets than the low-quality options.

SUMMARY OF RECRUITING OPTIONS

The low shortfalls projected for fiscal years 1978 and 1979 permit the services to make gradual changes in their personnel policies. In analyzing the option to

eliminate shortages through reduced turnover, the analysis has assumed that the services first proceed to increase reenlistments and accept efficiencies in training, before reducing attrition and recruiting more women. Increases in civilians, changes in physical standards and other policy changes would be deferred until fiscal year 1982 or beyond. Table 14 shows the annual savings attributable to these policies. Five-year savings for fiscal years 1978-1982 total \$780 million.

TABLE 14. COSTS (+) AND SAVINGS (-) OF MILITARY RECRUITING OPTIONS. (Millions of fiscal year 1977 dollars)

	Fiscal Year			
	1978	1979	1982	1985
Increased Pay & Recruiting:				
Pay Raises	+160	+270	+3,730	+8,370
Bonuses	+160	+270	+1,250	+2,560
High Quality & Reduced Turnover	-100	-180	-150	-140
Lowered Quality & High Turnover	+30	+90	+260	+360

The option that eliminates shortages through lowered recruit quality shows cost increases above fiscal year 1977 rates. These costs assume that the services reduce physical standards in fiscal year 1978 and accept lower-quality enlistees beginning in fiscal year 1979. These relatively low costs are augmented by the costs of increased recruiting budgets, beginning in fiscal year 1981. The five-year costs of the lowered-quality option is \$670 million.

Yet both these options produce significant savings in avoiding the major cost increases which will result if the services follow current policies to obtain higher-quality recruits without simultaneously reducing the rate of turnover among military personnel. The two options avoid five-year cost increases for fiscal years 1978-1982 from higher pay and increased recruiting that would range from \$3.3 billion to \$8.2 billion.

Preceding chapters address issues bearing on the number of personnel the Department of Defense needs and the difficulties of recruiting them. Compensation policies relevant to these issues, including effects of retirement benefits on turnover rates and pay raises on recruiting, have been discussed in general. This chapter covers these pay policies and other compensation issues in detail and relates them to manpower policy.

The Department of Defense (DoD) compensates its military employees in a variety of ways: a basic cash pay, cash and in-kind allowances for food and housing, tax exemptions, cash pay for special or hazardous work, bonuses upon enlistment and reenlistment, retired pay, free medical care, subsidized food stores, and other fringe benefits. The principal objectives of this compensation system should be to allow DoD to recruit and retain the personnel it needs at minimum cost. But a variety of study groups--including the First Quadrennial Review of Military Compensation, the Defense Manpower Commission, and two Administration retirement study groups--have reviewed military compensation patterns in the past ten years and concluded that they do not fulfill the principal objectives.

A major problem has been high and rapidly growing costs. Between fiscal years 1964 and 1977, manpower costs as a percent of defense outlays grew from 44 to 53 percent, in large part because of higher pay. 1/ Nor are high costs the only problem. The compensation system sometimes fails to provide adequate management flexibility or a desirable pattern of incentives--as the recruiting and turnover analyses in the preceding chapters suggest. The system

1/ Manpower Requirements Report for FY 1977, Department of Defense, February 1976, p. XV-4.

is so complex that the incentives it provides often are not clear. Some large groups of military personnel, particularly those without dependents, may view the system as inequitable. A final problem, perhaps the cause of many of the others, is that the military compensation system has not been fundamentally revised since the end of conscription and the rise of military pay to more competitive levels.

These problems have led to a number of proposals to revise the military compensation system. Among those the Congress may face in this or subsequent sessions are the following:

- o Retirement Reform. Major reform of the military retirement laws could eventually lead to direct savings of \$2 billion a year or more in retirement outlays (15 percent of total outlays). Reform could also lead to additional savings by giving DoD more flexibility in manpower management to achieve a more efficient mix of age and experience in its forces. Options for reform of retirement benefits include one proposed by DoD, another more far-reaching reform that was introduced in the House during the last session of the Congress, and a proposal by the Defense Manpower Commission that would vary retirement benefits depending on whether one served in combat or non-combat jobs. In addition, any of these reforms could require contributions toward retirement by active duty military personnel.
- o Other Retirement Changes. In addition to major reform, some relatively minor changes in the retirement laws could improve the equity and consistency of the military retirement system. These reforms could eventually save as much as \$200 million per year.
- o Salary System. Several study groups have proposed changing existing law to combine some or all of military pays into a single salary. A single salary could simplify the pay system and make pay more visible. A simpler, more visible pay system could improve DoD's ability to recruit and retain personnel, possibly leading to savings. DoD's Third Quadrennial Review of Military Compensation is considering a salary system, and legislation to

convert to a salary system was introduced last year in the House.

- o Size of Pay Raises. Military raises currently are linked directly to those given to federal white collar workers. This linkage does not necessarily result in military pay levels that allow DoD to compete for the personnel it needs. A new formula tailored to military requirements could be devised.
- o Allocation of Pay Raises. Under current law, the President has considerable flexibility in allocating pay raises among various types of military pay. Depending on how the allocation is done, net costs to the government could vary by a total of \$2.5 billion over the next five years. The way raises were allocated this year resulted in modest improvement in DoD's ability to compete for desired groups of personnel, and was one of the least costly allocation options. However, the allocation procedures are confusing, may decrease the visibility of pay, and have other drawbacks that suggest they should be reviewed.

The issues highlighted here do not, of course, exhaust potential reforms of the military compensation system. They do cover two major compensation issues that may well be before the Congress--retirement reform and a salary system --and sample some that are less important. In order to make decisions on these issues, the Congress needs criteria for choice, which is the subject of the next section. The chapter then addresses each of the issues outlined above.

CRITERIA FOR CHOICE

Comparability or Competitiveness

Federal law requires that federal civilian workers be paid salaries equal to those paid in the private sector for comparable work (see, for example, 5 U.S.C. 5301). The law does not require that the military be paid salaries

comparable to those in private industry, but military pay raises are linked directly to those given white collar federal employees.

Comparability generally has been established through surveys. Personnel specialists identify jobs in the private sector that have responsibilities comparable to those of the typical worker in a certain federal grade, and the wages of these comparable private-sector jobs are surveyed. Then wages for all federal workers at that grade are set to match average private-sector wages in the comparable jobs. 2/

As a method for choosing wage levels, comparability has a serious flaw. Comparability may not capture the many differences--such as fringe benefits, job security, working conditions, and promotion opportunities--that could exist between two jobs that appear on paper to be comparable. Under those conditions, application of the comparability test may overpay a desirable job (and waste money) and underpay a less attractive job (and thus fail to attract a qualified person to perform the work).

An alternative test for judging appropriate compensation levels is competitiveness. This test requires that total compensation (including salary and all benefits) should be the smallest amount adequate to attract and retain qualified persons. Because the test of competitiveness recognizes all types of compensation associated with a job, this paper uses that test as a standard. Thus the paper focuses on least-cost ways to attract desired personnel, rather than on comparability with private sector wages.

Of course, comparability surveys may be useful guides to establishing competitive compensation and handling day-to-day salary administration. Also, federal compensation

2/ The survey process actually is much more sophisticated than this brief discussion suggests. For example, data on wages for all grades are used to set salaries. The process attempts not only to match average private wages, but also to maintain certain differentials between grades. But the fundamental input to the process is still the salaries of comparable private-sector jobs.

policy no doubt will retain the comparability test. Indeed it was reaffirmed only recently by the President's Commission on Federal Compensation (Rockefeller Commission). ^{3/} Thus, this paper also considers the effects of alternatives on comparability.

Simplicity and Equity

A compensation system must be reasonably simple, so that the incentives it offers are clear. The military compensation system is certainly not. It is a complicated amalgam of cash basic pay, allowances received in cash and in-kind, a score of special pays, tax advantages from allowances that are exempt from federal and state income taxes, and free or subsidized services. Partly because they are confused, some personnel underestimate their total compensation. Simplicity could be achieved by combining some or all of these pays into a single cash salary, although the military probably still would need to provide additional compensation for some hazardous or stressful duty.

The military compensation system also should be viewed as equitable, but for military personnel without dependents the current system seems inequitable. They receive less compensation because their housing allowances are lower and because they make less use of free services such as medical care than personnel with dependents, even when they are in the same grade, have identical seniority, and do the same work. And many military personnel, whether they have dependents or not, feel that a recent erosion of benefits is inequitable. The Congress has made some reductions in military compensation in recent years: for example, limitations on pay raises, reduction in benefits paid to those who leave the military, termination of special proficiency pay, and changes in the mechanism that determines cost-of-living raises for military retirees. Within the last ten years, the Congress has also substantially increased basic pay and allowances for some in the services. However, if

^{3/} Report to the President of the President's Panel on Federal Compensation, December 1975, p. xi.

military personnel feel that cost-cutting is being concentrated on military pay, as they may if piecemeal cuts continue, they are likely to feel that they are being treated inequitably.

Desired Force Profile

In order to determine competitive compensation, DoD must know the type of military people it needs. This requires a knowledge of the numbers and skills of desired recruits, and the desired pattern of retention. Chapter III reviewed the desired number of military recruits. As that chapter indicated, the requirements vary with changes in desired military force levels, efficiency with which manpower is used, retention, and other factors. Estimates in the last chapter, under a variety of assumptions, provide a basis for a general analysis of compensation alternatives.

Since institution of the all-volunteer force, the services have paid at least as much attention to the quality as to the quantity of recruits. An important test of a compensation system is whether it will achieve both quality and quantity.

Desired patterns of retention are also important in choosing among compensation alternatives. DoD's ability to hold quality personnel depends on compensation and personnel management policies. The combined effects of the present system can be seen by looking at Table 15 which shows the numbers of enlisted and officer recruits who remain in the services at various points in their careers. The rate of retention--especially for enlisted personnel--changes dramatically at different career points. More than 80 percent of enlisted recruits leave before completing five years of service. Of those who stay beyond five years, nearly 50 percent complete a career of 20 years. Of those who remain 20 years, only 3 percent complete a 30-year career. Officers show a similar, though less pronounced, pattern.

TABLE 15.

RETENTION OF OFFICERS AND ENLISTED PERSONNEL

Years of Completed Service	<u>Numbers Remaining Out of 1,000 Entrants</u>		
	Enlisted	Officers	Officers & Enlisted <u>a/</u>
0	1,000	1,000	1,000
5	194	411	211
10	121	329	137
15	97	327	115
20 <u>b/</u>	89	318	107
25	11	134	21
30	3	46	6

SOURCE: DoD Actuary (table #1780)

a/ Mixture of officers and enlisted, based on current active force proportions.

b/ Number qualifying for 20-year pension. Some naval personnel qualify a few months before completing 20 years of service.

DoD and independent groups such as the Defense Manpower Commission agree that DoD needs a different pattern of retention. 4/ DoD needs higher retention at the journeyman level (i.e., among those with four to twelve years service) in order to realize the benefits of training and experience. DoD also needs higher retention among senior personnel (those with over 20 years service) to provide experienced leaders. It needs fewer personnel with 12 to 20 years service to avoid a surplus of middle level managers. These

4/ See, for example, Report to the Secretary of Defense by the DoD Retirement Study Group, May 31, 1972, pp. 6-8; and Defense Manpower: The Keystone of National Security, Report to the President and the Congress by the Defense Manpower Commission, April 1976, pp. 316-325.

general guidelines are used throughout this chapter to test whether alternative compensation schemes help or hurt DoD's competitive position.

The needed pattern of retention will differ by occupational specialty. At present, the services pay reenlistment bonuses of up to \$15,000 to encourage retention in certain occupational specialties, and to meet shortages of experienced personnel. Bonuses are probably an efficient way to meet requirements that differ by occupation. Some improvement in these bonuses, and perhaps even changes that cause pay to vary by occupation, are important reforms that deserve further review. But they will not be discussed further in this general overview of military compensation.

Alternatives in this paper also affect retention of another important group--married personnel. Between 1955 and 1974, the percentage of male military members who were married grew from 38 to 56. At the same time, the average number of dependents per married male grew from 2.1 to 2.7.^{5/} These shifts have increased the cost of pay and allowances--which are higher for married personnel--and of medical care, moving costs, and other services. Because of these long-term costs or savings, and also because of effects on equity, this chapter considers whether compensation alternatives encourage or discourage married personnel from remaining in the military.

RETIREMENT SYSTEM

The preceding section pointed out a need to increase the numbers of personnel with between four and twelve and with more than 20 years of service, while reducing numbers with between 12 and 20 years of service. Military retirement benefits have a strong influence on retention at all these points; thus retirement reform is one key to improving retention. Retirement reform will also have a substantial effect on future manpower costs. If forces remain at

^{5/} Martin Binkin, The Military Pay Muddle, The Brookings Institution, 1975, p. 38.

their current size, by the year 2000 the cost of military retirees will be about \$13 billion per year in 1978 dollars. Retirement reform could reduce this cost by \$2 billion per year or more.

This section considers, first, the costs and effects of the current retirement system, and then the effects of four benefit reforms. It includes a discussion of another major reform, contributory retirement, as well as some relatively more minor retirement reforms.

This paper concentrates on retirement benefits provided to retirees who leave active duty without disability; benefits to this group account for about 80 percent of total retirement costs. It also discusses one minor issue pertaining to reserve retirement. Other types of retirement costs--for those who retire with disabilities and for survivors--are important questions but are beyond the scope of this paper. Even the treatment of active duty non-disability retirement is brief. CBO has undertaken a more thorough review of military and civil service retirement at the request of the House Budget Committee.

Current System

Description and Costs. The current military retirement system pays nothing to individuals who leave the armed forces with less than 20 years of service. With 20 or more years of service the system pays a lifetime annuity that begins immediately. A retiree's annuity is calculated by multiplying 2.5 percent of his basic pay on the day he retires by his years of service. Hence the annuity after 20 years of service is 50 percent of terminal basic pay, rising to 75 percent with 30 years of service. After retirement, annuities increase with rises in the Consumer Price Index. Military personnel do not contribute directly to this retirement system.

Under these policies, CBO estimates that military retirement will cost \$9.1 billion in fiscal year 1978. The \$9.1 billion includes costs of all types of retirement, even though this section concentrates on non-disability benefits to active duty personnel. Based on wage and price

growth assumed by CBO, these costs will increase to \$12.1 billion in fiscal year 1982.

Effects on Retention. Data presented in Table 15 show that almost 80 percent of all enlisted recruits leave after four years of service. The absence of any retirement benefits until after 20 years of service does little to discourage this exodus. However, turnover also is high among civilians in this age group, and hence fairly high losses are to be expected. At the four-year point, the more important influence of retirement is its effect on a service's willingness to keep people. Once an enlisted person has completed one term (usually three or four years of service) and reenlisted for another, the services are unwilling to force that person to leave until he has completed 20 years and become eligible for a pension. Forcing him out with less than 20 years, the services would argue, is unfair because it strips the member of a valuable pension (to a typical enlisted person with 10 years service, a pension is worth about \$95,000 in today's dollars). 6/ At present, the services hold down retirement costs by limiting the number of personnel permitted to reenlist. All of the services are turning down some qualified persons who desire to reenlist after four years of service. This policy sacrifices the multiple benefits of higher first-term reenlistments, including a larger number of experienced journeyman personnel, reduced need for recruits, and lower training and recruiting costs (see Chapters II and III).

The retirement system could be changed to provide some benefits after as few as five years of service. Then the services should be more willing to reenlist a person after one term when his experience is needed and then to separate

6/ A typical enlisted person is assumed to retire as an E-6 after 20 years of service and live 33 years after retirement. Today an E-6 with 20 years service receives \$9,600 per year in basic pay. The \$95,000 estimate is the discounted present value of retirement assuming 5.5 percent wage growth, 4.5 percent annuity growth after retirement, and a discount rate of 7 percent.

him with equitable benefits after 10 to 12 years of service to avoid an excess of supervisors. This problem is less important for officers, who typically do receive some severance pay if they are involuntarily separated before retirement. But a problem exists even for officers because severance pay often is considerably less than retirement benefits.

Retirement benefits also have a strong effect on retention later in a career. Few personnel leave after 10 to 12 years of service, largely because of the lure of retirement; and, as noted above, the services do not force out these personnel because they would lose their pension rights. But a large fraction leave immediately after completing 20 years of service. This exodus occurs in large part because staying after 20 years means delaying receipt of one's pension which sometimes fully offsets the larger annuity that is earned by remaining on active duty.

In sum, the benefit structure under the current retirement system provides little retention incentive and causes the services to release personnel at the very point where DoD needs to improve retention (i.e., those with 4 to 12 and with more than 20 years of service). But current benefits provide a major incentive to stay to those whom DoD needs in smaller numbers (i.e., those with 12 to 20 years service).

Alternative Retirement Systems

Reform of retirement benefits can change these retention patterns, and save money. One such reform is the Retirement Modernization Act (RMA), which was before the Congress last session as H.R. 7769. The legislation makes two major changes. First, it provides or "vests" benefits earlier; benefits will be available after as few as five years of service, which should make the services more willing to increase first-term reenlistments but to force out some reenlistees before they complete 20 years. Second, the legislation reduces retirement benefits to those who retire after only 20 years; for the first 10 years of retirement, benefits are reduced by 30 percent. This should encourage retention after 20 years of service. The Retirement Modernization Act also includes a number of minor changes to the retirement system, and includes transition

provisions that phase in all changes over 10 years so that benefits to those currently on active duty will not change abruptly. 7/ The Act would, however, reduce the retired pay of some personnel already on active duty. This has led to objections from military members who argue that benefits in effect when they entered the military should not be taken from them.

Under the RMA legislation, costs would increase in years immediately after passage but eventually large savings would result. Costs (in inflated dollars) increase by \$70 million to \$160 million per year in fiscal years 1978-1982 because of early vesting and because the legislation's reduced annuities save little in fiscal years 1978-1982 due to transition provisions. 8/ However, by about fiscal year 1985, the proposal would begin to save money, and savings by fiscal year 2000 would amount to about \$700 million per year in 1978 dollars (5 percent of total retirement outlays).

In 1971, a governmental Interagency Committee (IAC) proposed a reform that is similar to the Retirement Modernization Act but is more far-reaching. 9/ The IAC plan provides

7/ RMA bases annuities on average basic pay in the year during which pay was highest, rather than on basic pay at the time of retirement. RMA also reduces annuities of those receiving Social Security by one-half the Social Security payments "attributable to military service." This year's version of RMA may also rescind the early reenlistment credit (this issue is discussed in a later section of this chapter), as well as set a minimum annuity for those subject to Social Security offsets.

8/ Except where specifically noted, all cost estimates in this chapter are inflated dollars based on wage and price growth in CBO's October 1976 economic assumptions. In this section, costs for retirement benefit reforms are based on estimates made by DoD in January 1976. The DoD estimates have been revised to reflect CBO's October 1976 economic assumptions. These assumptions are detailed in the Appendix.

9/ Report to the President on the Study of Uniformed Services Retirement and Survivor Benefits by the Interagency Committee, Volume I, July 1, 1971, pp. 1-1 to 1-15.

early vesting as does the Retirement Modernization Act, but annuities to 20-year careerists are reduced more and the reduction lasts longer. Because of these larger reductions, the retention changes caused by the Committee proposal would be greater. Also under the Committee proposal, savings would begin within about five years, and by fiscal year 2000 the Committee plan would save about \$2 billion per year in 1978 dollars, or 15 percent of total retirement outlays. Further study is needed to select between the two plans.

Another retirement plan has been proposed by the Defense Manpower Commission (DMC). ^{10/} The distinguishing feature of the Commission proposal is that annuities are based on jobs performed during active service. Persons who spend a career in combat jobs receive a larger annuity, and can begin receiving it earlier, than those in noncombat careers. The Commission argues that this approach will promote the "youth and vigor" necessary in combat specialties but avoid promoting early retirement in noncombat specialties. While these changes are probably desirable, it may be difficult to classify jobs as combat or noncombat in a way that all military personnel would view as fair. CBO has not estimated costs under the Commission proposal. However, they would probably follow a pattern similar to those under other plans: small increases in costs in the first years but large savings later.

All three of the above reforms provide annuities to at least some military members after 20 years service; military personnel usually complete 20 years of service at age 40 to 42. A fourth proposal would delay payment of non-disability annuities until a certain age, usually 55 or later, as does the civil service retirement plan. A bill introduced last session (H.R. 15775) does not start military non-disability retirement payments until age 55 even for members who have completed 30 years of service. Benefits for those completing less than 30 years start as late as age 62, though personnel separated involuntarily before completing 30 years may receive some benefits immediately, depending on their civilian income. Such a proposal should reduce costs much more than any of the other three reforms, but it also could make it difficult for DoD to compete for some personnel, such as combat personnel. Combat jobs are less attractive to many; in fact DoD has had to pay enlistment bonuses

^{10/} Report of Defense Manpower Commission, pp. 341-383.

to get combat recruits. Also, there is little call for combat skills in the private sector, but the services' desire to maintain a youthful and vigorous combat force means most combat personnel must leave after 20 or so years of service, even though retirement benefits are delayed.

Contributory Retirement

Military personnel currently contribute nothing directly to their retirement system. In addition to any of the reforms reviewed above, military personnel could be required to contribute a part of their pay toward financing retirement benefits. A contributory system would make the military system more like those offered to federal civil servants and some private sector employees. A contributory system could also save money. But it does so by reducing the take-home pay of military personnel, which generates opposition from military members.

A contributory retirement system would significantly affect DoD's competitiveness. It would reduce compensation to those remaining for a 20-year career and hence their numbers, which probably is desirable. But contributory retirement by itself would do nothing to increase first-term reenlistments or the numbers of personnel who remain in the service longer than 20 years. In fact, it could reduce both, which is probably undesirable. Contributory retirement also raises several other important questions: If contributions are required, should military personnel still be required to remain under Social Security? Should military pay be increased to offset the contribution? Should a contributory plan be mandatory or voluntary? Should a fund be set up to receive military members' contributions?

These major questions suggest that contributory retirement should be considered as part of a fundamental reform. The analysis here does not attempt to resolve the questions, but does illustrate cost savings under one contributory plan that could be incorporated into a general retirement reform. The plan assumes military personnel will remain under Social Security. The plan

requires contributions of 7 percent of basic pay, including contributions into Social Security. 11/ Thus on basic pay dollars up to the maximum taxable by Social Security, the retirement contribution equals 1.15 percent, the difference between 7 percent and the Social Security tax rate of 5.85 percent. On basic pay dollars in excess of the Social Security maximum, members contribute a full 7 percent toward retirement. This scheme is similar to the civil service system, which requires contributions of 7 percent but exempts employees from Social Security taxes (the systems are not identical since military employees receive Social Security benefits based on military earnings, whereas civil servants do not receive Social Security benefits based on civil service earnings). The plan assumes that all military members participate, but that those who leave the military before retirement receive refunds with interest at 3 percent. The plan assumes that military pay is not increased to offset the contribution, and that contributions are taxable (as civil service contributions are now).

11/ The 7 percent contribution, even without the Social Security credit, falls far short of fully funding military retirement. An enlisted man actually retiring as an E-7 after 20 years (pay of an E-7 after 20 years equals \$10,900 per year) would have had to contribute about 80 percent of his basic pay each year (or 40 percent if matched by DoD) to fully fund his retirement, assuming only 3 percent annual inflation. An officer actually retiring as an O-6 after 20 years would have had to contribute about 60 percent of his basic pay per year, again assuming 3 percent annual inflation. This does not imply that DoD would have to set aside 60 to 80 percent of its total bill for basic pay, since many personnel do not stay to retirement. A 1976 GAO study (A Contributory Retirement System for Military Personnel, B-120537, p. 23) estimates that about 37 percent of total DoD basic pay would have to be set aside.

TABLE 16.

SAVINGS UNDER CONTRIBUTORY RETIREMENT
(Millions of dollars, inflated using
October 1976 economic assumptions)

Fiscal year 1978	220
Fiscal year 1979	200
Fiscal year 1980	180
Fiscal year 1981	170
Fiscal year 1982	160

The table above shows that savings range from \$220 million in fiscal year 1978 to \$160 million by fiscal year 1982; net savings decline as refunds increase. Over the next five years, savings total over \$900 million. These savings to the government would not necessarily reduce DoD's budget; reductions to the DoD budget depend on exactly how the contributory system is accounted for in the budget. Also, though estimates reflect all major savings in fiscal years 1978-1982, savings might change in the longer run. A reduction in the number of personnel who serve to retirement would eventually reduce costs of retirement benefits. On the other hand, higher turnover of personnel would increase costs of recruiting and training. And some fraction of any savings, perhaps 20 percent or so, would eventually be lost to the government through reduced tax revenue because annuity payments up to the amount of the contribution would be tax-free.

Other Retirement Changes

Benefit reforms and contributory retirement require fundamental changes in the retirement system. But smaller revisions could be implemented without fundamental reform, much as the retiree cost-of-living mechanism was revised last year by the Congress. Unlike earlier issues, these will not fundamentally change DoD's competitive position. But changes may save money and make the retirement law more equitable and consistent with other federal retirement systems. This section first briefly discusses these revisions, then analyzes their costs.

Extra Retirement Credits. Current law allows enlisted members of the Navy and Marine Corps two types of retirement credits not allowed other military members (10 U.S.C. 6330 (d)). Navy and Marine Corps enlisted personnel can begin receiving non-disability retired pay after 19.5 years of service whereas other military members must complete 20 years before retiring. In addition, Navy and Marine Corps enlisted members can reenlist as much as three months before the end of their tour of duty and still count their full enlistment toward retirement. This can be done at each reenlistment. ^{12/} Since there are typically four reenlistments in a career, some members receive another year or more of extra credit. Together, these extra credits let some Navy and Marine Corps enlisted personnel receive retired pay after completing only 18.5 years of service, or even after fewer years depending on how often they reenlist. Even if Navy and Marine Corps enlisted personnel complete 20 years of actual service, the extra reenlistment credit allows them to receive retired pay based on more than their actual years of service. Since there is no evidence that DoD must offer a special incentive to recruit and retain this group, the Congress may wish to repeal the law.

Reserve Retired Pay Adjustments. The retired pay of reservists on inactive duty is adjusted upward by the amount of active-duty wage increases. Wage adjustments continue even after these reservists leave inactive duty (usually around age 40 to 50) and continue until they reach age 60 and begin receiving retirement benefits. This provision of the law makes reservists the only group of military retirees whose annuities are increased by wage increases after they leave government service (10 U.S.C. 1401). The alternative in this paper gives reservists who have left government service increases based on the Consumer Price Index.

^{12/} The Navy now requires a six-year reenlistment to qualify for three months credit. Four-year reenlistments qualify for two months; three-year reenlistments for one month.

Dual Compensation. Current law requires that retired regular military officers who are civilian employees of the federal government forfeit an average of one-third of their retired pay (5 U.S.C. 5532). The law attempts to minimize instances of "dual compensation," i.e., one person being paid twice by the federal government. It has been proposed that this law be repealed, extended to require forfeiture of all retired pay, or modified to apply current forfeiture provisions to both regular and reserve officers. This section considers all three alternatives. Advocates of repeal believe the law unfairly penalizes one group of people solely because they choose a second career in the federal civil service and makes it more difficult for the civil service to compete for a unique source of experienced personnel. Proponents of full forfeiture argue that it is unfair for persons to draw two paychecks from the federal government, and that former military officers should be discouraged from civil service careers to prevent conflicts of interest. Proponents of extending current forfeiture provisions to all officers argue that it is unfair to distinguish between regular and reserve officer retirees, since retirement benefits do not depend on this distinction.

Costs. Only rough cost estimates can be made because of a lack of data and because costs depend on future personnel behavior that is highly uncertain. Rough estimates are shown in Table 17 along with notes describing the data and behavioral assumptions that underlie the estimates.

Eventually, all of the alternatives discussed above will result in total savings in 1978 dollars of between \$150 million and \$195 million per year. The lower savings assume dual compensation is repealed or that full forfeiture is required, whereas the higher savings assume that current forfeiture provisions are extended to reserve officer retirees. The full amount of these long-run savings will not be realized for 20 to 30 years.

Savings in the next five years depend on the transition provisions imposed by the Congress. If the alternatives discussed above are fully and retroactively implemented at the beginning of fiscal year 1978, then Table 17 shows that total savings over the next five fiscal

TABLE 17. SAVINGS (-) /COSTS (+) UNDER RETIREMENT CHANGES (In millions of dollars, inflated using October 1976 economic assumptions)

	Fiscal Year 1978	Fiscal Year 1979	Fiscal Year 1980	Fiscal Year 1981	Fiscal Year 1982	Total 1978- 1982	Long Run (1978 dollars)
Repeal extra retirement credits <u>a/</u>	-30	-35	-35	-40	-45	-185	-85
Reform reserve retired pay adjustments <u>b/</u>	-5	-10	-15	-15	-20	-65	-85
Dual compensation							
-Repeal <u>c/</u>	+20	+25	+25	+25	+25	+120	+20
-Full forfeiture <u>d/</u>	+20	+25	+25	+25	+25	+120	+20
-Extend to reserves <u>e/</u>	-25	-25	-25	-25	-30	-130	-25

a/ According to DoD actuary estimates (table 1945, processed), total cost of Navy and Marine Corps enlisted retirements will be about \$80 million per year in 1978 dollars. The estimates of savings assume that 42 percent of Navy and Marine Corps enlisted retirees have exactly 19 years of service; the rest have 20 or more years. Percents are based on DoD actuary figures (table 1780). Most of the savings in the next five years result from delaying retirements; CBO assumes no mass exodus just prior to implementation. Savings in the long run include substantial savings from reducing multipliers of those retiring with 20 or more years of service. All savings reflect only retirement costs; they do not include lower training costs nor higher costs of pay and allowances.

b/ Five-year savings are based on the DoD estimate that full-year cost of reserve retirees in 1978-1982 will be about \$32 million per year in 1978 dollars. DoD tables are used to estimate length of time between leaving inactive duty and retirement. Then DoD's history of wage and retired pay increases (DoD actuary table 2022), and CBO current policy projections, are used to estimate reductions due to the change in the law. Steady state numbers assume a long-run retired population based on current retirements per year. Steady state wages are assumed to increase 1.5 percent faster than retired pay each year.

c/ Costs are based on recent Civil Service Commission estimates of numbers subject to forfeiture provisions, and on average annuities of current officer retirees who are age 60 or less (DoD actuary table 1994, processed).

d/ Because full forfeiture reduces the pay of regular officers working for the federal civil service by an average of about \$12,000 per year, CBO assumes that essentially all these officers leave the civil service. Thus costs are the same as under repeal. If this assumption is incorrect and numbers subject to forfeiture fall by two-thirds rather than by their full amount, then there is no cost increase.

e/ About 7 percent of all regular officer retirees work in the federal civil service. This alternative assumes that a similar percentage of reserve officers would work in civil service if forfeiture was imposed. The same average annuities are used in costing this alternative as were used to estimate costs of repeal.

years range between \$130 million and \$380 million. ^{13/} The range depends on the dual compensation alternative that is chosen. At the other extreme, if the transition provisions avoid affecting anyone now in the active military or civil service, then savings in the next five years will be negligible. Other transition provisions could result in savings greater than zero but less than those in Table 17.

SALARY SYSTEM

In addition to deferred retirement income, military personnel receive pay and allowances while on active duty. The current system of pay and allowances is so complex that many military personnel underestimate their pay, and some personnel without dependents receive less pay for the same work than personnel with dependents. Replacing some or all of the pay and allowances with a single salary could correct these problems. A salary system also would change DoD costs and federal tax revenue by several billion dollars per year.

Military personnel all receive cash basic pay based on grade and longevity. They also receive quarters and food allowance, either in cash or in kind; the quarters allowance is higher for personnel with dependents than for those without dependents. Neither the food nor quarters allowance is subject to federal or state income taxes or Social Security taxes. In addition to basic pay, allowances, and this tax advantage, eligible military personnel may receive many other cash and in-kind pay:

^{13/} "Full" implementation assumes that Navy and Marine Corps enlisted personnel who retire in fiscal year 1978 and future years are not allowed to use any extra retirement credits, no matter when they accumulated them. Full implementation also assumes that retired pay of all reservists who retire in fiscal year 1978 and future years is computed based on wages when the reservist left inactive duty, adjusted only by increases in the Consumer Price Index. And full implementation assumes that dual compensation alternatives take effect immediately.

allowances for hazardous duty, pay for special work, bonuses upon enlistment and reenlistment, free medical care and legal services, and retirement benefits.

In 1967, the First Quadrennial Review of Military Compensation proposed that many of these pays be combined into a single, fully-taxable salary. ^{14/} The 1976 report of the Defense Manpower Commission also recommended a salary system. ^{15/} The General Accounting Office is preparing a report that may recommend a military salary system, and the Third Quadrennial Review may be considering such a system.

This section briefly outlines the major arguments for and against a salary system. The section also analyzes one illustrative system, concentrating on its budget effects rather than the detailed analysis other groups will supply.

Arguments

A major argument for a single, fully-taxable military salary is that it improves the simplicity and visibility of military pay. Under the current system, a substantial portion of pay is "hidden" as in-kind allowances or in forms that reduce tax obligations. Proposed pay raises may well increase the hidden portion, as the next section indicates. These hidden pays make it difficult to calculate the full value of pay, and surveys suggest that military personnel often underestimate the full value. ^{16/} A simpler, more visible salary may provide greater enlistment and reenlistment incentives at no increase in cost. Alternatively, it may allow DoD to cut costs without reducing incentives.

^{14/} Modernizing Military Pay, Department of Defense, Vol. I, November 1, 1967, p. S-5.

^{15/} Report of the Defense Manpower Commission, pp. 329-332.

^{16/} See, for example, Need to Improve Military Members' Perceptions of Their Compensation, GAO (B-163770), October 10, 1975, pp. 2-3.

A salary system would also be more equitable, at least in the sense of providing equal pay for equal work. The major bias under the present system is toward personnel with dependents. A military member with dependents and another without dependents do not receive equal pay, even though they have the same grade and years of service and job, because the quarters allowance is substantially higher for personnel with dependents and because they benefit more from fringe benefits such as medical care. The tax advantage also introduces biases, favoring those in higher tax brackets. Thus, single members benefit more from the tax advantage than married members, senior personnel more than junior, and those with outside income more than those with none. A salary system could provide one fully-taxable income to a member based on his grade and years of service, thus reducing these biases.

Another argument in favor of a new salary system is that it would reflect all of DoD's manpower costs directly in the Department's budget. Currently, more than \$2 billion of DoD's manpower costs are represented by reduced tax revenues. Transferring these to DoD should improve resource allocation by making clear the full cost of manpower.

There are objections to a salary system. It would restrain pay increases given to many personnel with dependents, making it unpopular with this large group. The upper limit on federal employees' salaries (currently \$39,600) would significantly restrain pay raises for high-ranking officers under a salary system, though this limit may soon be revised. A salary system also would increase the state taxes paid by most military personnel.

A salary system would also create administrative problems. DoD owns and maintains housing for many of its personnel. If quarters allowances are replaced by a salary, a charge will have to be made for this housing. Because the quarters vary widely in quality, it will be difficult to establish charges that match the quality of housing. Overpricing could lead to empty housing and morale problems, underpricing to a windfall for lucky

members. However, DoD already provides reduced rates for housing it designates as substandard, and it could presumably expand its designations to create an equitable price structure.

Finally, there would be problems of transition. To prevent pay cuts, a "save-pay" system would have to be developed. Also, many pays (retired pay being the chief among them) are linked to basic pay; new formulas for these pays would have to be devised. While formidable, these problems do not seem insurmountable.

A new salary system need not affect near-term costs. The system could be designed to leave net cost to the federal government unchanged, although it would do so by increasing both DoD's costs and federal tax revenues by more than \$2 billion per year. The alternative illustrated in this section is designed to leave most costs unchanged in the near-term.

In the longer run, any salary system could reduce costs significantly by increasing salaries of personnel without dependents relative to those of members with dependents. This should arrest or even reverse the growth in the percentage of personnel who are married. A reduction in numbers of married personnel and dependents will eventually cut costs of medical care, moving costs, and other services.

An Illustrative Alternative

To illustrate budget costs and effects, this section discusses a salary system based on "regular military compensation" (RMC). RMC is defined in the law as the sum of basic pay, cash food and quarters allowances and the federal income tax advantage. RMC seems a reasonable basis for a salary system because DoD frequently uses it to estimate the value of military pay. Also, a salary system based on RMC was proposed in the last session of the Congress (H.R. 15772) and has been studied by the Third Quadrennial Review. 17/

17/ "Single Pay Rate for All Eyed in Pentagon Plan," Army Times, May 17, 1976, p. 1.

The system illustrated here pays each military member a fully taxable salary equal to his RMC; the salary replaces basic pay and the food and quarters allowances. The salary equals RMC, averaged for those with and those without dependents. Thus salary does not depend on marital status, though it does depend on grade and longevity, as does the current system. Under the salary system, those living in government quarters or eating in government food facilities are charged on the basis of the full cost of these services.

The salary system is assumed to be fully implemented on October 1, 1977, but a hold-harmless or "save-pay" provision insures that no member's cash pay (after deductions for federal income taxes) is reduced. Numerous other detailed assumptions influence costs and effects on individual pay. 18/

18/ The estimates begin with RMC based on fiscal year 1977 pays and allowances. RMC is estimated separately for each paygrade but averaged over years of service. CBO uses DoD estimates of numbers with and without dependents, and of those drawing and not drawing allowances; numbers are consistent with the President's fiscal year 1977 budget. Charges for quarters are based on fiscal year 1974 DoD estimates of quarters costs by paygrade, inflated to today's dollars; 22 percent of all members are assumed exempt from quarters charges because of sea duty. Charges for food are based on average fiscal year 1977 budget costs; following DoD assumptions, 30 percent of single members are assumed exempt because they choose not to eat in government mess halls. Charges for quarters and food are inflated in years beyond fiscal year 1977 using a rent inflator for quarters and the CPI for food. Tax estimates assume current law continues. All members are assumed to take standard deductions and have no outside income. Married persons are assumed to file jointly and have numbers of dependents based on DoD estimates. Save-pay assumes that salary (less federal income taxes) of those with and without dependents does not fall below the following level: fiscal year 1977 cash pay and cash allowances, less income tax, increased by the fiscal year 1978 pay raise. Save-pay costs would fall considerably if the system were implemented before the fiscal year 1978 pay raise. The formulas linking other pays tied to basic pay (e.g., retirement, reserve pay, bonuses) are assumed to be revised so that costs under the salary system equal those under the current system.

Table 18 estimates changes in all federal costs and tax revenues affected by conversion to a salary system. The changes are relative to the current system. ^{19/} In the next five fiscal years, DoD's costs (net of charges for food and quarters) increase over the current system by about \$2 billion per year. DoD's costs are up because salaries are higher to offset the tax advantage; in the early years save-pay also pushes up DoD's costs. Tax revenues are also up because the entire salary is subject to both federal income and Social Security taxes. After fiscal year 1978, tax revenues increase more than DoD costs. Hence, net government outlays are lower under the salary system, and the government benefits in the near term. But this gain is due entirely to increased Social Security revenues, which may eventually cause higher Social Security outlays and offset the gain. When Social Security costs and revenues are excluded from numbers in Table 18 and save-pay has ended, the salary system results in essentially no net change in government outlays.

The salary system also affects the pay of military personnel. Cash pay, before any deductions are made, goes up sharply. By fiscal year 1982, when save-pay has ended, cash pay under the salary system is 4 to 45 percent higher than it would be if the current pay system remains in effect. The range depends on grade and whether a member was receiving cash or in-kind allowances under the current system. But cash pay, and hence pay visibility, improves for all members under the salary system.

Conversion to a salary system also affects a more comprehensive measure of pay--after-tax pay. Table 18 shows percentage differences between fiscal year 1982 after-tax pay under the salary system, and what after-tax pay would be if the current system is kept. Under the

^{19/} Under current law, the President has authority to redistribute pay raises among types of pay in ways that significantly affect costs (see next section). To avoid additional complexity, this section assumes raises after fiscal year 1977 are distributed equally among basic pay, quarters allowances, and food allowances (see alternative 1 in Table 19).

TABLE 18. COSTS AND REVENUES UNDER SALARY SYSTEM
(In millions of dollars, inflated using October 1976 economic assumptions)

	Fiscal Year 1978	Fiscal Year 1979	Fiscal Year 1982
DOD Costs	+2350	+1990	+2250
Save pay	(+560)	(+130)	(--)
Social Security contribution	(+390)	(+380)	(+460)
All other	(+1400)	(+1480)	(+1790)
Federal tax revenues	+2270	+2250	+2720
Income tax	(+1490)	(+1490)	(+1800)
Social Security	(+780)	(+760)	(+920)
Net Cost (+)/saving (-) to government	+80	-260	-470

HOW SALARY SYSTEM CHANGES 1982 AFTER-TAX PAY a/ (percentage changes)

	With dependents	Without dependents	All personnel
O-4/O-5/O-6	-3.7%	+0.9%	-3.4%
O-1/O-2/O-3	-5.0	+1.3	-3.5
All Officers	-4.4	+1.3	-3.5
E-6/E-7/E-8/E-9	-8.3	+8.1	-7.1
E-4/E-5	-9.8	+9.4	-3.6
E-1/E-2/E-3	-13.0	+8.8	+2.0
All Enlisted	-9.9	+9.0	-2.2

a/ Under the salary system, after-tax pay equals salary plus all pays and allowances in the military personnel appropriation except basic pay, food allowances, and quarters allowances. Pays are inflated by expected wage growth as appropriate. After-tax pay is net after federal income and Social Security taxes. Under the current system, after-tax pay includes all cash pays and allowances in the military personnel appropriation, inflated where appropriate. In addition, under the current system, after-tax pay includes in-kind allowances, valued at their cost, and inflated by growth in rental costs (for basic allowance for quarters) and the CPI (for subsistence in kind). Again, after-tax pay is net after federal income and Social Security taxes. In calculating federal income tax, it was assumed that persons have no income other than from the military, and that they use standard deductions. Married personnel are assumed to file joint returns.

salary system, after-tax pay for those without dependents increases faster than for those with dependents. As a result, by fiscal year 1982, after-tax pay of those without dependents is 1 to 9 percent more than it would be under the current system, depending on grade. The equalization of pay between personnel with and without dependents restrains increases in after-tax pay for those with dependents. Thus by fiscal year 1982, after-tax pay for those with dependents is 4 to 13 percent lower than it would be if the current system is kept.

When personnel with and without dependents are considered together, after-tax pay is 2 percent higher than it would be for junior enlisted personnel (grades E-1 to E-3). For all other grades, the increases in after-tax pay are 3 to 7 percent less than they would be under the current system. Reduced raises in these higher grades reflect the higher percentage of personnel with dependents in these grades. Also, raises in most grades are restrained because of the higher Social Security taxes discussed above.

PAY RAISES AND ALLOCATION

Size of the Raise

The size of any pay raise given to military personnel has large budget effects. For example, a decrease of one percent in the fiscal year 1978 raise reduces costs by almost \$200 million in fiscal year 1978 and, even if there are no reductions after fiscal year 1978, by a total of \$1 billion in fiscal years 1978-1982. Thus the method of determining pay raises is important to the budget. Under current law, military personnel in all grades receive raises equal to the average raise given General Schedule (white collar) civilian employees. But General Schedule and military personnel do not perform like jobs, nor do they work under similar conditions. Thus, raises that are appropriate for civilian workers may not be appropriate for the military. Certainly the present linkage does not insure that pay increases will make DoD sufficiently competitive in the labor market. Moreover, splitting the white-collar work force into two schedules for purposes of determining raises--an action recommended by the

Rockefeller Commission (see Chapter V)--could make the linkage more confusing. Depending on how the split is implemented, it could also increase DoD's costs by a total of over \$3 billion in the next five fiscal years.

Given these drawbacks, the Congress may wish to enact a new pay raise law. One possibility is a law that eliminates the direct linkage to General Schedule raises and allows raises to vary by grade and type of pay. The Congress could specify that raises be designed to meet several needs: maintain DoD's competitiveness in recruiting, move toward incentives that will achieve desired retention, and keep the pay system as simple as possible. Subject to meeting these needs, the timing, and even the approximate size, of raises could be based on those given General Schedule civilians, in order to maintain a sense of equity among federal employees.

Military raises could be proposed by the President's pay agent (now the Civil Service Commission and Office of Management and Budget) as this agent now does for General Schedule raises. Raises also could be proposed by a new and more independent body, such as the Federal Compensation Board recommended by the Defense Manpower Commission.^{20/} The Congress could maintain the same control it now has over General Schedule raises by providing that, unless the President accepts the recommendation of his pay agent without modification, he must submit his pay plan to the Congress for concurrence.

This pay raise mechanism offers the major advantage of permitting larger raises to recruits and other groups for whom DoD is having difficulty competing. Severing the direct linkage to General Schedule raises would also eliminate problems of changes in the General Schedule mechanism, such as splitting the schedule. However, allowing an administrative group to recommend military pay raises could provide a focal point and impetus to military unions, which some would view as undesirable.

^{20/} Report of the Defense Manpower Commission, pp. 307-316.

Allocation of the Raise

In the absence of a new pay raise law or conversion to a salary system, raises must be allocated among various types of military pay. Current law allows the President considerable discretion in this allocation. Depending on how the President acts, DoD costs and tax revenues could vary by as much as \$2.5 billion over the five fiscal years 1978-1982.

Military pay raises are distributed among the three largest types of military pay: basic pay, cash quarters allowances, and cash food allowances. Until this year, a law (P.L. 93-419) in effect for the last two years required that all three types of pay be increased by an equal percent. Thus if the overall raise was 6 percent, all three types of pay were increased by 6 percent. This year, the Congress allowed the President to put less of the raise into basic pay and more into housing and food allowances. The new allocation scheme does not affect the raise given to personnel drawing cash housing and food allowances; these personnel simply receive more of their raise as allowances. However, cash raises are reduced for the significant fraction of military personnel who forego cash allowances in return for housing and food provided by the government in the form of barracks, bachelor officers' quarters, military family housing, and military messes. In effect, the new allocation scheme increases the "rent" these people pay when they forfeit their allowances. In order to protect single personnel living in government quarters--who already forfeit more than the cost of their housing--the Congress authorized the President to grant them a special payment or "rebate" that offsets the increase in rent.

Costs. The new allocation scheme affects costs in several ways. By allocating more of the raise to the allowances, DoD saves money because persons who live in government quarters or eat in military messes--and thus forfeit their cash allowances--get lower raises. Also, allocating part of a raise to allowances reduces basic pay raises and thus cuts the cost of pays tied to basic pay (e.g., reserve and retired pay). On the other hand, the allowances are exempt from federal income tax. Thus allocating more to the allowances means the government foregoes more tax revenue.

Table 19 shows both DoD costs and foregone tax revenues (Social Security and federal income tax revenues). Costs are shown for three different methods of allocating raises. All three methods are allowed under current law. The first alternative continues the fiscal year 1977 policy of allocating more of the raise into housing allowances and so is designated as current policy; the other two are chosen to illustrate the most and least expensive alternatives. (Notes to Table 19 define the alternatives fully.) The difference between the least and most expensive alternatives total about \$2.5 billion over the next five years, and \$170 million in fiscal year 1978 alone. Current policy is less costly than any alternative except one. Thus, from a cost standpoint alone, current policy is a good choice, and the one cheaper alternative (maximum allocation with no rebates) is even better.

Effect on Competitiveness. A pay raise mechanism should not only keep costs at a minimum, but should allow DoD to compete for needed personnel. Table 20 shows percentage increases in a comprehensive measure of military pay, after-tax pay and allowances (including in-kind allowances). Table 20 suggests that--relative to the other alternatives--the current policy allocation improves DoD's competitiveness in several ways, though by small amounts. Among the three alternatives in Table 20, current policy gives the highest increases to enlisted recruits (E-1 to E-3). Increases to personnel with five to ten years of experience (typically E-4 and E-5) are close to the highest increases under the three alternatives, while increases to senior enlisted personnel (E-6 to E-9) are close to the lowest. This pattern of increases in after-tax pay should improve recruiting and journeyman-level retention, while reducing incentives to more senior personnel, which is consistent with the criteria discussed earlier.

However, the pattern of increases under the least expensive alternative (Alternative No. 2) is not consistent with the criteria. Increases are markedly lower for recruits, single personnel, and personnel with five to ten years of experience. Hence Alternative No. 2 probably would hurt DoD's ability to compete for important groups of personnel.

TABLE 19. COSTS UNDER ALTERNATIVE ALLOCATION POLICIES (Millions of dollars, inflated using October 1976 economic assumptions)

	Fiscal Year 1978	Fiscal Year 1979	Fiscal Year 1980	Fiscal Year 1981	Fiscal Year 1982
	Current Policy (Maximum allocation to quarters, with rebates) <u>b/</u>				
DoD Costs Affected by Raises <u>a/</u>	34,250	36,130	38,140	40,360	42,830
Foregone Taxes <u>a/</u>	1,680	1,810	1,970	2,140	2,340
Net Cost to Government	35,930	37,940	40,110	42,500	45,170
Changes in:	Alternative 1 (Equal raises in all three types of pay) <u>c/</u>				
DoD Costs	+100	+220	+360	+520	+730
Foregone Taxes	-40	-80	-140	-190	-260
Net Cost to Government	+60	+140	+220	+330	+470
	Alternative 2 (Maximum allocation to quarters, no rebates) <u>d/</u>				
DoD Costs	- 90	-140	-200	-250	-320
Foregone Taxes	- 20	- 40	- 50	- 70	- 90
Net Cost to Government	-110	-180	-250	-320	-410

a/ DoD costs include costs of all cash pays and allowances affected by pay raises, reserve pay, and pay of retirees. Foregone taxes include both federal income tax and Social Security tax. Foregone taxes are based on both cash and in-kind allowances. Social Security taxes are included because the alternatives reduce Social Security tax revenues immediately. However, Social Security credits are also reduced. In the distant future, these lower credits may reduce Social Security outlays. All estimates are based on data supplied by DoD.

b/ Twenty-five percent of the basic pay raise, the maximum allowed by law, is assumed allocated to quarters allowances. CBO follows DoD practice in assuming that the allocation is done separately for each paygrade. Grades that receive the same quarters allowances are treated as one grade for purposes of allocation. Rebates are treated as a form of quarters allowances, and so are exempt from federal income and Social Security tax. Rebates in years beyond fiscal year 1977 are assumed to be cumulative, but not inflated. Thus, rebates in a given year are the sum of this year's rebate plus rebates in the previous year.

c/ This alternative returns to practices before the latest change in the law. In fiscal year 1978 and all future years, each type of pay (basic pay, quarters allowance, food allowance) receives an equal raise. Rebates paid in fiscal year 1977 are continued but are not inflated.

d/ This alternative makes the same assumptions as current policy except that, after fiscal year 1977, no rebates are paid.

TABLE 20. INCREASES IN AFTER-TAX PAY AND ALLOWANCES a/
(Cumulative percentage increases over
fiscal year 1977 levels, October 1976
economic assumptions)

Paygrades	<u>With Dependents</u>		<u>Without Dependents</u>		<u>All Personnel</u>	
	<u>Fiscal Year 1978</u>	<u>Fiscal Year 1982</u>	<u>Fiscal Year 1978</u>	<u>Fiscal Year 1982</u>	<u>Fiscal Year 1978</u>	<u>Fiscal Year 1982</u>
Current Policy (Maximum allocation to quarters, with rebates)						
Enlisted						
E-6/E-9	4.73%	27.00%	4.67%	26.55%	4.72%	26.96%
E-4/E-5	4.61	26.84	4.67	26.33	4.64	26.69
E-1/E-3	5.14	29.52	4.99	28.11	5.03	28.55
All Officers	4.58	25.97	4.81	27.49	4.62	26.23
Alternative 1 (Equal raises in all three types of pay)						
Enlisted						
E-6/E-9	4.84	27.75	4.76	27.59	4.83	27.73
E-4/E-5	4.61	26.94	4.70	26.81	4.64	26.90
E-1/E-3	4.84	27.51	4.86	27.88	4.86	27.77
All Officers	4.73	26.70	4.65	26.62	4.72	26.70
Alternative 2 (Maximum allocation to quarters, no rebates)						
Enlisted						
E-6/E-9	4.73	27.00	3.55	22.64	4.64	26.66
E-4/E-5	4.61	26.84	3.35	21.72	4.21	25.20
E-1/E-3	5.14	29.52	3.14	21.67	3.76	24.13
All Officers	4.58	25.97	4.01	24.71	4.49	25.76

a/ After-tax pay and allowances include all cash pays and allowances in the military personnel appropriation. (Where allowances are not given by grade, the best available data was used to apportion the allowance by grade.) In addition, after-tax pay and allowances include in-kind allowances, valued at their cost, and inflated by growth in rental costs (for basic allowance for quarters) and the CPI (for subsistence in kind). After-tax pay and allowances are net after Social Security and federal income tax. In calculating federal income tax, it was assumed that persons have no income other than from military, and that they use standard deductions. Married personnel are assumed to file joint returns.

Though current policy modestly improves DoD's competitive position, it and the other allocation schemes have major drawbacks. None of the allocation schemes provides pay increases adequate to attract the number and quality of enlisted recruits that the services will need if they pursue existing policies and practices. Another drawback to alternatives involving allocation is that they complicate the pay raise mechanism, making it harder and harder for military personnel to understand how their pay changes. Moreover, all the mechanisms increase the part of compensation made up of tax breaks. Current policy leads to the largest increases in tax breaks, providing larger tax-free allowances and tax-free rebates. Studies cited in the last section show that military personnel often underestimate the value of pay they receive in the form of tax breaks.

Effect on Rents. DoD advertised the new allocation scheme as a means of making effective "rent" for government quarters match fair market value, or at least of making rents match the cost of quarters. ^{21/} Higher allocations to quarters allowances will eventually achieve this latter goal, but only for married personnel living in government quarters.

Under current policy allocations, quarters allowances increase in real terms (i.e., after factoring out inflation) by 25 to 50 percent by fiscal year 1982. The increases depend on grade, with higher grades generally receiving higher real increases. These increases in quarters allowances mean higher effective rent for married personnel living in government quarters who forfeit their quarters allowances. But the cost to the government of providing quarters for these people far exceeds today's rent, and the allocations--though they move toward equalizing cost and rent--would have to continue into the mid-1980s to match rent and cost for all grades of married personnel living in government quarters.

^{21/} Prepared Statement of William K. Brehm before the Senate Armed Services Committee, Hearings on Fiscal Year 1977 Department of Defense Authorization, 94-2, February 6, 1976, Part 3, p. 1440.

For single personnel living in government quarters, increases in rent are offset by rebates, at least under current policy. This leaves the relationship between rent and cost unchanged. But single persons living in government quarters--in contrast to their married counterparts--now forfeit quarters allowances that are two to three times higher than the cost of the average quarters. No alternative does anything to reduce this difference.

In sum, current policy is one of the least costly pay allocation schemes and results in raises that--relative to other alternatives allowed under current law--improve DoD's competitiveness for important groups by a modest amount. But neither current policy nor any other pay raise alternative provides incentives adequate to recruit the personnel the services claim to need, simplifies the pay raise scheme, improves the visibility of pay, or equalizes costs and rents for single personnel living in government quarters.

SUMMARY AND INTERACTIONS

The alternatives presented in this chapter suggest that, especially in the longer run, fundamental changes can be made in the military retirement and salary systems that both save money and improve DoD's ability to recruit and retain desired personnel. The changes will not be easily made. There are many ways to reform the system, and further study and much judgment will be required to choose among the alternatives. Also, there will be objections from military personnel to any reforms that restrain the growth in their pay.

While the more fundamental reforms usually do not realize savings in the first few years, there are some minor retirement reforms that can reduce costs in the near-term while increasing the consistency and equity of the retirement system. Also, the current policy of pay raise allocations is one of the cheaper alternatives in the near-term, and simultaneously makes small improvements in DoD's ability to compete for desired groups of personnel. However, the current method of pay raise allocations, as well as the linkage between military and General Schedule pay raises, has a number of drawbacks that argue for further review.

The table below summarizes the costs and savings from the various alternatives. Costs and savings are summarized in constant 1977 dollars to facilitate comparisons with savings cited elsewhere in the text, 22/

TABLE 21. COSTS (+)/SAVINGS (-) RELATIVE TO CURRENT POLICY (Millions of Fiscal Year Dollars)

	Fiscal Year 1978	Fiscal Year 1979	Fiscal Year 1982	Fiscal Year 1985
Retirement Reforms				
Retirement Modernization Act	+150	+110	+50	-40
Interagency Committee proposal	+140	+90	-90	-500
Contributory Retirement	-210	-180	-120	-90
Other Retirement Changes				
- Maximum savings <u>b/</u>	-55	-65	-70	-90 <u>a/</u>
- Minimum savings <u>b/</u>	-15	-20	-30	-70 <u>a/</u>
Salary System <u>c/</u>	+75	-235	-355	-355
Pay Raise Allocation <u>c/</u>				
Current Policy	-	-	-	-
Equal raises in all three types of pay	+55	+125	+355	<u>d/</u>
Maximum allocation to quarters, no rebates	-105	-160	-310	<u>d/</u>

a/ 1985 savings estimated at roughly half long-run savings.

b/ Maximum savings assume extension of dual compensation to reserve officers; minimum savings assume repeal of dual compensation.

c/ Costs are net costs to government.

d/ Estimates not made.

22/ Savings are deflated to 1977 dollars using wage increases in October 1976 economic assumptions.

While these compensation reforms have been presented separately, they interact in significant ways. For example, a military salary system and reform of retirement benefits both reduce incentives to the average enlisted man and officer with ten to twenty years of service. But for persons with over 20 years of service, the reforms conflict: the salary system reduces incentives to stay on active duty beyond 20 years--because most senior personnel are married and eventually receive less pay under the salary system--while retirement reform increases incentives to stay on duty by reducing pensions of those who leave after 20 years. For junior personnel, retirement benefit reform would tend to increase incentives to reenlist, but inclusion of contributory retirement as part of retirement reform could offset some or all of these increased incentives. The implication of these interactions and there are many others, is that compensation reform should be considered as a package to insure that desired incentives are achieved.

Package reform should also minimize morale problems. If the Congress and the Executive Branch debate piecemeal reforms year after year, military personnel will constantly be anxious about potential pay reductions. There are already many complaints about erosion of benefits. Eventually this feeling may prompt some to leave the military. One package reform should minimize the morale problem.

Civilian employees account for more than 30 percent of DoD's manpower costs and, therefore, civilian compensation issues are important to DoD. Moreover, it is important that civilian pay reform, where appropriate, accompany military pay reform so that all federal employees are treated equitably. Important civilian compensation issues that may confront the Congress in this or subsequent sessions include:

- o Wage Board Pay Reforms. A Presidential commission has recommended major changes in the law that governs pay of federal Wage Board (blue-collar) workers. The changes would still keep federal blue-collar wages equal to average private-sector wages. But the changes would eventually save the government \$660 million per year in 1978 dollars; DoD alone would save more than \$500 million per year. Legislation to effect the changes was introduced last year and probably will be reintroduced in the next session.
- o General Schedule Pay Reforms. The same Presidential commission recommended changes in the way raises are determined for federal General Schedule (white-collar) employees. No legislation has been introduced, and further study is needed to estimate cost effects of all the recommendations. But the changes could significantly affect DoD's white-collar payroll. Because military raises are linked to white-collar raises, changes in the white-collar system could also affect the military payroll, perhaps by as much as \$3.5 billion over five years.
- o General Schedule Grade Growth. The Congress has shown concern over growth in the average grade of General Schedule employees. Growth was rapid in 1964-1970 but has been slower since then (in fact, average grade declined in some years since 1970). Studies cited in this

section suggest that the classification system used to establish white-collar grades could have caused past growth and could foster future growth, though there are other possible explanations. Cuts in average grade would save money; for example, a return toward the 1964 grade distribution could save DoD a total of \$1.8 billion over the next five years.

These three issues are, of course, only a sampling of potential changes in civilian compensation, though they represent issues with large effects on DoD's budget. In reaching decisions on these civilian compensation issues, the test of comparability with private-sector pay is used more than in the last chapter because jobs are more similar among federal and private-sector civilians than among military and private-sector civilians. However, the fundamental criterion remains the ability to compete for desired personnel at minimum cost.

WAGE BOARD PAY

In fiscal year 1977, the federal government will spend about \$7.5 billion to employ Wage Board (blue-collar) workers; \$6 billion of this total will be spent by DoD. 1/ Pay of blue-collar workers is determined under legislation enacted in 1968 and 1972. The President's Panel on Federal Compensation (Rockefeller Commission) and a General Accounting Office study both recommended major changes in this law. 2/ According to the Rockefeller Commission, the current law causes "significant departures from the local prevailing rate principle," which result in "an unfair competitive advantage for the Federal Government, and unjustifiable payroll costs." 3/ Indeed the recommended changes would eventually save the government about \$660 million per year in

1/ Data in this section refer only to trades and craft Wage Board employees, who are covered by the law in question.

2/ Improving the Pay Determination Process for Federal Blue Collar Employees, General Accounting Office (B-164515), June 3, 1975, pp. i-iii.

3/ Report to The President of the President's Panel on Federal Compensation, December 1975, p. 24.

1978 dollars. The changes were embodied in H.R. 12843, a bill proposed by the Administration during the last session of the Congress but not passed.

This section first describes the current pay determination system and an alternative based on H.R. 12843, followed by an analysis of the costs and effects of the alternative.

An Alternative to the Current System

Average-to-Average. Current law specifies that the non-supervisory Wage Board pay schedule will consist of 15 pay grades, each with five pay steps (5 U.S.C. 5343). 4/ By law, pay for step two determines pay in the other steps. Workers in pay step one receive 96 percent of step two wages while workers in steps three, four, and five receive 104, 108, and 112 percent, respectively, of step two wages. The law also specifies the minimum time that must be served in each pay step before an employee is eligible for promotion to the next step.

In addition to promotion policies and pay differentials, the law says that raises are to be granted so as to maintain comparability with local prevailing rates. To this end, raises are determined separately in about 135 geographical areas called wage areas. In each wage area the government surveys private-sector wages for comparable jobs. Then the government determines raises to equate average private-sector wages with wages paid to those federal Wage Board employees at pay step two. If the average step equaled two, this would result in comparable pay. But as of June 30, 1975, the average step for DoD employees equaled step 3.7; based on data supplied by DoD, CBO projects the average step will rise to 4.2 by 1982. Thus by 1982 the typical

4/ Wage Board employees are classified into one of three major pay schedules--supervisory, leader, or non-supervisory--or into one of numerous special schedules. Since provisions governing the non-supervisory schedules are most important to the alternative, we concentrate on them.

DoD Wage Board worker will receive about 9 percent more than the average private-sector worker in a comparable job. 5/

The alternative system eliminates step two as the reference step for comparison with private-sector averages. Instead, the alternative compares average private-sector wages to the average federal wage in all pay steps, i.e., the comparison is "average-to-average." An average-to-average comparison eliminates the extra 9 percent.

In addition, the alternative system repeals the legal requirement for five pay steps, allowing the Civil Service Commission to set the number. The number of pay steps does not affect total payroll costs if the average-to-average comparison is implemented. 6/ But the number of steps has other important effects discussed below.

Repeal Monroney Amendment. An amendment passed in 1968 (called the Monroney amendment) provides that when the number of private-sector employees in certain specialized jobs (e.g., aircraft technicians) is deemed insufficient to provide an adequate basis for a survey, private-sector wages for these specialized jobs must be imported from the "nearest wage area that ... is most similar in the nature of its population, employment, manpower, and industry ..." (5 U.S.C. 5343(d)). This sometimes results in federal wages in small cities and rural areas being based, in part, on private-sector wages in big-city areas (e.g., Macon, Georgia, wages are based, in part, on data from Atlanta). Under

5/ By law, step two workers receive the average private-sector wage. The law also says that step three, four, and five workers receive 104, 108, and 112 percent of step two wages. Since each step above two receives 4 percent more, an average step of 4.2 means that the average worker receives about 9 percent more than the private-sector average $[(4.2-2) \times 4 \text{ percent} = 8.8 \text{ percent}]$.

6/ Total payroll costs equal the number of workers times the pay of the average worker. Under the average-to-average comparison, the average worker receives the same pay regardless of the number of pay steps. The number of steps could affect costs during the transition period.

Civil Service Commission regulations, these imported data cannot be used if they lower any wages. Moreover, the imported data raise wages of all employees, not just those in specialized jobs. In 1976, the Monroney amendment increased wages in 28 of the 135 wage areas and affected about 17 percent of all Wage Board workers. The increases ranged from negligible to more than 25 percent. Thus, the Monroney amendment results in wages for certain employees that exceed the local wage structure.

The alternative repeals the Monroney amendment. Wages for all personnel will be set based on prevailing local rates, just as is done now in areas where the Monroney amendment does not apply. If recruiting or retention problems develop in certain specialties, the Civil Service Commission will use existing authority to establish special schedules.

Other Changes. Current law sets nationwide differentials for night shift work; the alternative system bases them on local practice. Also, current law forbids inclusion in the survey of state and local government workers even though, in the country as a whole, state and local governments employ about 16 percent of all blue-collar workers. The alternative allows inclusion of these data.

Last year's Administration bill also proposed changing current law to reduce the frequency of full-scale surveys from biannual to triannual. Small-scale surveys would be done in other years. The Civil Service Commission argues that this change would cut costs and reduce the data burden on private employers. 7/ The General Accounting Office report also recommends a number of administrative changes: more training for survey workers, redefinition of wage areas, and reduction in the minimum-size firm that is included in the survey. 8/ These provisions are described here for completeness. No attempt has been made to estimate the cost effects, which should be small.

7/ United States Civil Service Commission, Letter accompanying H.R. 12843 (Statement of Purpose and Justification), p. 3.

8/ Improving the Pay Determination Process, GAO, pp. ii-iii.

Transition Provisions. If implemented immediately, the alternative would cut the pay of some workers. But the alternative includes transition provisions to insure that, while moving toward the new system, workers still get some minimum raise. The alternative follows last year's bill (H.R. 12843). No transition provisions are provided for workers hired after enactment of the new system. For workers employed before enactment, the alternative grants all current employees at least a 3 percent raise in 1978. In subsequent years, employees receive half the regular raise, up to a maximum of 3 percent, until their wages come in line with the new system. Once in line with the new system, employees receive the full increase.

Costs and Effects

Costs. Eventually the alternative described above would reduce federal Wage Board expenditures by about \$660 million per year in 1978 dollars; DoD's share of these savings would amount to \$540 million per year.

Actual savings would be lower during many of the next five years because of transition provisions. Table 22 shows savings during the next five years relative to the current pay policy, i.e., the policy specified in 5 U.S.C. 5343 and Civil Service Commission regulations. The alternative saves all federal agencies (including DoD) \$140 million in fiscal year 1978. ^{9/} DoD alone saves \$110 million. Savings in years beyond fiscal year 1978 increase significantly as the transition provisions are met and as inflation increases savings. Over the five fiscal years 1978-1982, total savings for all federal agencies total \$2.6 billion.

Table 22 estimates not only savings that assume all the provisions are implemented together, but also savings that assume separate implementation. By far the largest part of the savings come from the average-to-average provision, although repeal of the Monroney amendment saves significant dollars. (Data are not available to

^{9/} Except where noted, all dollars in this chapter are inflated using October 1976 economic assumptions (assumptions are detailed in Appendix A).

TABLE 22. SAVINGS a/ UNDER WAGE BOARD ALTERNATIVES (In millions of dollars, inflated using October economic assumptions; for fiscal years)

	1978	1979	1980	1981	1982	Total 1978-1982
<u>DoD Only</u>						
Adjusted Current Policy <u>b/</u>	6,390	6,740	7,120	7,520	7,980	35,750
Alternative						
Average-to-average <u>c/</u>	-110	-270	-410	-550	-640	-1,980
Repeal Monroney	-20	-40	-50	-60	-70	-240
Night shift differential	-3	-3	-3	-4	-4	-17
All provisions together	-110	-280	-430	-580	-680	-2,080
<u>All Federal Agencies (Including DoD)</u>						
Adjusted Current Policy <u>b/</u>	7,980	8,420	8,890	9,400	9,970	44,660
Alternative						
Average-to-average <u>c/</u>	-130	-340	-510	-690	-790	-2,460
Repeal Monroney	-20	-40	-60	-70	-70	-260
Night shift differential	-4	-4	-4	-5	-5	-22
All provisions together	-140	-350	-530	-710	-840	-2,570

a/ Savings are limited to wages.

b/ Projections are adjusted to reflect growth in average step. By 1982 average step is assumed to be 4.2.

c/ Savings assume the current five-step system is replaced by a system like its predecessor: three steps, 4 percent differential, 26 weeks from step 1 to 2 and 52 more weeks for each subsequent step.

allow estimates of savings or costs of adding state and local data to the surveys.) In the early years, the sum of savings assuming independent implementation exceeds savings from implementing all the provisions together because the transition provisions delay the required reductions in pay raises.

Reduced Pay Raises. The alternative moves toward the altered pay system by giving reduced raises; raises return to normal after the transition period. The reduction in raises suggests the effect on workers. Under current policy and CBO economic assumptions, Wage Board workers will receive an effective 5.9 percent raise in 1978. But under the alternative, raises will average only 2.9 percent. Over the next five years, cumulative raises will total 32 percent under current policy versus 21 percent under the alternative. Workers and their unions oppose these reduced raise rates.

Comparability and Competitiveness. As noted, the average federal Wage Board worker will receive about 9 percent more than a private-sector counterpart in his local wage area. By eliminating step two as a reference point, implementing the average-to-average comparison, and repealing the Monroney amendment, the alternative system restores comparability in the sense of equating wages of average federal and private workers in comparable jobs. Opponents of the alternative point out that step two has traditionally been the reference step, that the 9 percent may make up for what opponents feel is low pay given to federal Wage Board workers, and that the administrative procedures necessary to implement the average-to-average comparison are more complex and subject to management manipulation. Those who oppose repeal of the Monroney amendment also argue that, if comparability means basing federal salaries on private-sector wages in all specialties rather than only on those represented in the local economy, then the Monroney amendment is necessary to maintain comparability.

The alternative also affects the competitiveness of government workers in several ways. The alternative should reduce the amount of work contracted out to the private sector. Under current regulations within the Executive Branch, federal work should be contracted out to the private sector when private firms can do the work more

cheaply. The Office of Management and Budget recently said it will pursue contracting-out more aggressively. By making federal wages comparable to those paid private workers, the alternative pay system should reduce the amount of work allocated to private firms. However, unions point out that many factors other than costs enter the contracting-out decision; thus reducing federal costs may have little effect.

The alternative pay raise system will also reduce the federal government's ability to compete with private industry for experienced personnel. However, for the average worker, wages will be reduced down to, but not below, private sector averages. Special schedules can be used to maintain competitiveness if wages for workers with special skills are cut below the private average.

The federal government must also compete for new workers. Under the alternative system, the federal worker at the average step will receive the average private-sector wage. But new workers, who generally come in at step one, will receive about 12 percent less, depending on the average step. Recruiting problems could develop. However, if the Civil Service Commission uses its administrative authority (granted by the alternative) to reduce the number of steps, then the government should be better able to recruit. If recruiting problems still develop in some skills, special schedules can be used.

Other Effects. The above-average wages paid by the federal government tend to push up wages as private firms compete for employees. These higher private wages are then included in the federal survey and push up federal wages. Especially in areas where the federal government is a large employer of Wage Board personnel, an inflationary spiral results. The alternative system breaks this spiral.

The alternative system may reduce the pay differential between senior and junior personnel. The current system has five pay steps with four percent differentials between steps; thus the differential between the most senior and junior worker is 16 percent. If the Civil Service Commission uses its authority, granted by the alternative system, to reduce the number of steps or the pay differential, then the senior-junior differential will decline. Opponents object on the grounds that any reduction renders the federal Wage Board system less consistent with the federal white

collar system, which has ten pay steps per grade with a differential ranging from 2.5 to 3.5 percent per step. Also, opponents point out that the spread among wages in all of private industry--though not in any one firm--is greater than in the federal government. Advocates of fewer steps point out that reduction in the number of steps would bring the federal government more in line with the private sector. According to a 1971 Civil Service Commission survey, the average system in a private firm had only two steps. 10/ Moreover, as was indicated above, the number of steps may have to be reduced to avoid recruiting problems.

During the transition period, new workers will receive lower pay than old workers with the same grade and step. This will occur because the transition provisions protect workers employed at the time the law is changed but not new workers. This problem could be eliminated by applying the transition provisions to new as well as old workers, although this would delay savings.

GENERAL SCHEDULE PAY

In addition to recommending reform of the Wage Board pay system, the Rockefeller Commission recommended improved comparability for white-collar General Schedule (GS) civilians. Another CBO paper reviews these recommendations in more detail. 11/

One major recommendation, involving changes in the scope and method for using private sector survey data to determine white-collar pay, has already been implemented. The second major recommendation splits the General Schedule into two services. Because they vary widely from area to area, private-sector wages in local areas will determine

10/ Improving the Pay Determination Process, GAO, p. 6.

11/ See CBO's forthcoming background paper on federal pay systems.

pay for clerical/technical service, according to a third recommendation. For the professional/administrative/managerial/executive service, private-sector pay is more uniform across the country; thus the Commission recommends that federal pay be the same nationwide. A fourth major recommendation attempts to insure that total compensation, rather than just salaries, are kept comparable between the private sector and General Schedule employees.

CBO has only estimated the cost effects of splitting the General Schedule into two services and basing clerical/technical salaries on local area data. Using Civil Service Commission data, CBO estimates that, if the General Schedule were split, the clerical/technical service payroll would be reduced by 2.05 percent while the professional service would increase by 3.1 percent. For the government as a whole, this means an increase in the civilian payroll by about \$250 million in the first full year of implementation. Basing the clerical/technical service wages on local data saves \$350 million. The two actions together save about \$100 million the first year. Assuming DoD savings are proportional to its share of General Schedule pay, then savings to DoD from the two changes together could amount to \$40 million.

But splitting the General Schedule will also affect military pay because military pay raises are linked to General Schedule raises. If, after the split, the military is linked to the professional service--which is desirable in that it maintains a single nationwide raise for the military--then military pay costs over the next five years could increase by over \$3.5 billion. Other linkages could minimize or avoid this increase.

GENERAL SCHEDULE GRADE GROWTH

Regardless of reforms of the pay mechanism, the mix of General Schedule pay grades influences DoD's payroll costs and, by affecting average salaries, its ability to compete for General Schedule civilians. This alone makes General Schedule grade mix an important budget issue. In addition, the Congress and the Executive Branch have been interested in, and often critical of, General Schedule grade growth in DoD and the rest of the federal government. In testimony this year before the Senate and House Armed Services Committees, William Brehm (then Assistant Secretary of

Defense for Manpower and Reserve Affairs) commented that, despite some recent improvements in DoD, "it is still difficult to rationalize the growth [in average civilian grade] that has taken place since FY 1964." 12/ The Congress apparently agreed and mandated grade reductions in DoD. Though the Congress did not explicitly require reductions in other agencies, some may be underway.

To aid in judging the extent of cuts now underway, or the desirability of further cuts, this paper shows trends in General Schedule grade growth. Reasons for growth are reviewed to help judge whether the grade growth was justified. The paper then presents alternatives that the Congress could implement to further slow or reverse grade growth, and estimates the budget savings. While the discussion emphasizes DoD, the arguments are valid for other agencies and the alternatives cover all federal agencies.

Trends

The General Schedule consists of 18 pay grades, numbered 1 to 18. Table 23 shows average General Schedule grade between 1964 and 1977. The year 1964 was chosen for convenience; average grade also grew in earlier years. Data in Table 23 are shown separately for DoD and for all other federal agencies. Through fiscal year 1975, the data are based on actual numbers of permanent and temporary employees. After fiscal year 1975, the only figures available are budget plans (adjusted for Congressional action), which are expressed in terms of permanent, authorized positions. Though these two sets of data cannot be compared, the trends should be meaningful.

In DoD, average grade has grown from 7.23 to 7.65 (5.8 percent) between fiscal years 1964 and 1975. It continued to grow in fiscal year 1976 but should decline in fiscal year 1977 because of Congressional action. The rate of growth per year has varied widely. But it has been

12/ Prepared Statement of William K. Brehm before the Senate Armed Services Committee, Hearings on Fiscal Year 1977 Department of Defense Authorization, 94-2, February 6, 1976, Part 3, p. 1446.

TABLE 23. TRENDS IN AVERAGE GRADE OF GENERAL SCHEDULE EMPLOYEES

End Fiscal Year	DoD	Other Agencies <u>a/</u>
<u>Actual Employees (Permanent and Temporary)</u>		
1964	7.23	7.54
1965	7.30	7.56
1966	7.12	7.48
1967	7.05	7.54
1968	7.22	7.65
1969	7.53	7.90
1970	7.70	8.01
1971	7.77	8.04
1972	7.74	NA
1973	7.67	7.89
1974	7.56	7.98
1975	7.65	8.03
<u>Authorized Employees (Permanent Only)</u>		
1975	7.75	8.33
1976	7.81	8.36
1977 <u>b/</u>	7.78	8.36

SOURCE: Data on actual employees from DoD P32.2 reports and CSC Civilian Pay Structure Report (1966-1971) or OMB Grade Report (1973-1975). Data on authorized employees from Appendix to President's fiscal year 1977 budget, adjusted for Congressional action where known.

- a/ "Other agencies" numbers include all General Schedule employees in the judiciary, executive department, independent agencies and Congress' General Accounting Office. Military and civilian agencies within the Department of Defense, and the White House staff, are excluded.
- b/ The end of the fiscal year changed in 1976 from 30 June to 30 September. However, since these data deal only with permanent employees, trends should not be significantly affected.

notably slower in years since 1970. In fact, average grade declined in four of the seven years since 1970. However, average grade only declined in years when limits were imposed by the Executive Branch or the Congress.

This growth in DoD's average General Schedule grade since 1964 reflects a higher proportion of employees in grades above grade 9, particularly in grades 12 and 13, and a lower proportion in low grades, particularly grades 3 and 4. The percent of senior (grades 14 and 15) and supergrade (grades 16, 17 and 18) personnel has also increased, but by much less than increases in grades 12 and 13.

Average grade in federal agencies other than DoD follows a pattern similar to the one in DoD, but with slightly higher overall growth. Between fiscal years 1964 and 1975, average grade in non-DoD agencies grew 6.5 percent compared with 5.8 percent in DoD. Growth through fiscal year 1977 is about the same as in DoD. The proportion in various grades also changes as in DoD, though the changes in some grades are more pronounced. For example, the growth in proportion of senior and supergrades is considerably higher in other agencies than in DoD.

Reasons for Grade Growth

A number of reasons for grade growth are discussed below, along with information suggesting the importance of the causes. Unfortunately, in most cases data do not permit CBO to assign an amount of grade growth to any given cause. Nor can CBO judge which of the reasons, if any, resulted in "justifiable" grade growth.

Need to Remain Competitive. Salary levels, which are determined by grade and pay rates and annual raises, must be adequate to allow the federal government to hire and retain the personnel it needs. In other words, the federal government must remain competitive.

This need to remain competitive may explain part of the growth because promotions may have been used to offset low pay raises given certain groups. Before 1969, the Congress approved each raise. From 1965 through 1968,

wage increases given General Schedule employees averaged 4.0 percent per year. A survey of comparable private sector jobs showed that, for professional/administrative/technical workers, raises averaged 4.3 percent per year. ^{13/} In mid-1969, a mechanism was instituted to give General Schedule civilians the same average salary given private sector employees in comparable jobs. With one exception, recommended comparability salaries have been achieved each year (though sometimes after a delay). Of course, particular groups of personnel may not have achieved comparability. But average grade should not have risen after 1970 because of the need to offset low pay. And earlier grade increases to offset low pay, if any, should no longer be needed to maintain competitiveness. Indeed, grade growth has been slower since fiscal year 1970, perhaps because of this comparability system.

Changing composition of the General Schedule work force may also have contributed to grade growth. The composition of the force has changed as the proportion of technicians and professionals has increased. Also, private contracting of work formerly done by General Schedule personnel may have shifted the composition of the force toward higher, supervisory grades. Indeed, DoD estimates that changes in sizes of all occupational groups, including those above and those below the average grade, account for about two-thirds of the growth of DoD's average grade between fiscal years 1964 and 1974. This finding assumes that the average grade of each occupational group remained at its fiscal year 1964 level; increases in average grade within each group caused the other one-third of the growth. Though this finding may account for two-thirds of the growth in average grade, it does not necessarily justify it. The new positions that increased the size of high-average occupational groups may not have been needed or may not have increased productivity sufficiently to justify their higher grades and costs.

The Classification System. In addition to pressure to remain competitive, the classification system that determines white-collar grades may lead to overgrading. For

^{13/} National Survey of Professional, Administrative, Technical, and Clerical Pay, U.S. Department of Labor, March 1974, p. 2.

General Schedule personnel, there are no overall grade controls, such as those established by law for military officers. Federal agencies establish the grades of their employees, subject to the classification standards established by the Civil Service Commission. Commission audits between 1969 and 1974 found about 3 percent of the 54,000 positions surveyed were overgraded. But in 1974 a special, more sophisticated Civil Service Commission study of grades 12 to 15 revealed much higher overgrading (28 percent in Washington, D.C. and 10 percent elsewhere). A General Accounting Office study also found overgrading. These results are reported in a 1975 GAO study. 14/

According to the same GAO report, the major reason for overgrading is an effort by managers to inflate position descriptions that are the basis of grade classification and pressure agency officials to ignore overgrading. Managers apparently exert this pressure to reward employees, recruit employees, or to align positions with desired organizational levels. Even where overgrading was discovered, GAO reported reluctance and delay in reducing the grades. 15/

Because the GAO and Civil Service Commission estimates of overgrading were based on judgemental samples, they cannot be used to estimate the total number of overgraded positions. However, the studies make clear that the classification system does not discourage overgrading.

Other Reasons. Changes in organization size and associated hiring and firing policies also may cause grade growth. For example, reductions in size might be accomplished by eliminating lower graded positions, thus raising the average grade. However, based on data from each of the federal agencies in each fiscal year between 1964 and 1974, there was a low correlation between percentage decreases in size and grade growth. In fact, there was a low correlation between percentage changes in size, up or down, and increases or decreases in grade growth.

14/ Classification of Federal White-Collar Jobs Should Be Better Controlled, General Accounting Office (B-167266), December 1975, pp. 6-8.

15/ Ibid.

Other reasons for grade growth, often mentioned separately, are really aspects of the need to remain competitive. Increases in quality of personnel--perhaps to meet major new national needs--may have necessitated grade growth in order to compete for these personnel. Contracting-out to the private sector may have increased the proportion of supervisory job requirements. And poor position management may have spread the same managerial duties among more high-ranking persons, thereby increasing average grade.

Alternatives

The budget effects of continuing the fiscal year 1977 grade mix, adjusted for restraints imposed by the Congress, are shown on the current policy lines in Table 24. Two alternative lines illustrate policy decisions to further restrain grade growth. These are presented as general policies affecting all agencies and may need to be refined to reflect the problems of individual agencies.

All the alternatives show projections five years into the future to reveal the cumulative effects of the alternatives. The importance of effects several years hence emphasizes the need for the Congress to monitor grade policies every year, perhaps by tasking one of its staffs to conduct a regular review.

Current Policy. Current policy assumes that grade levels remain at their fiscal year 1977 budget levels, adjusted for Congressional action. A Congressional choice of current policy is appropriate if the Congress judges that past grade growth is justified by factors such as changing composition of the force, rather than being caused by lack of control in the General Schedule classification system or creation of unneeded, high grade positions. Current policy costs more than the other alternatives. Table 24 shows that total current policy costs for DoD increase from \$10.8 billion in fiscal year 1978 to \$13.5 billion by fiscal year 1982. All federal agencies (including DoD) show a similar trend.

Current policy costs may be understated or overstated, depending on future grade growth. Since 1964, average grade has grown in all years when controls were not imposed. Thus current policy, which assumes no future grade growth, could understate costs significantly. Assume, for illustration,

TABLE 24. COSTS ^{a/} AND AVERAGE GRADE OF GENERAL SCHEDULE EMPLOYEES UNDER ALTERNATIVE GRADE POLICIES (Costs in millions of dollars, fiscal years, inflated using October economic assumptions)

		1978	1979	1980	1981	1982	Total 1978-1982
		<u>DoD Only</u>					
Current Policy	Costs	10,800	11,400	12,000	12,700	13,500	60,400
	Avg. Grade	7.78	7.78	7.78	7.78	7.78	
Return to Fiscal Year 1975 level	Cost Change	-20	-40	-45	-45	-50	-200
	Avg. Grade	7.75	7.75	7.75	7.75	7.75	
Cut average grade by .1 per year	Cost Change	-65	-200	-345	-515	-700	-1,825
	Avg. Grade	7.68	7.58	7.48	7.38	7.28	
		<u>All Federal Agencies (Including DoD)</u>					
Current Policy	Costs	26,500	27,900	29,500	31,200	33,100	148,200
	Avg. Grade	8.11	8.11	8.11	8.11	8.11	
Return to Fiscal Year 1975 level	Cost Change	-45	-100	-105	-110	-115	-475
	Avg. Grade	8.08	8.08	8.08	8.08	8.08	
Cut average grade by .1 per year	Cost Change	-160	-515	-905	-1,340	-1,830	-4,750
	Avg. Grade	8.01	7.91	7.81	7.71	7.61	

^{a/} Costs include salary and benefits.

that average grade continues to grow in 1978-1982 at the average rate of growth experienced since 1970 (excluding years when controls were imposed). Then costs in Table 24 for all agencies are understated by a total of \$1.7 billion over the five fiscal years 1978-1982. On the other hand, if grades are reduced below the level of fiscal year 1977, as DoD and other agencies may do, then current policy estimates in Table 24 may overstate costs. In this case estimates under one of the alternatives below may be more accurate.

Return to 1975 Level. The Congress may believe that a modest reduction in average General Schedule grade is appropriate. This alternative, for example, requires that by the end of fiscal year 1978 average grade be at the level in the President's budget at the end of fiscal year 1975. For all agencies, this requires a slight reduction of average grade from 8.11 to 8.08; the largest reductions would be in grades 11 and 12. This lower level is maintained through fiscal year 1982. The Congress can implement this alternative by writing the fiscal year 1975 distribution into law, adjusted to reflect changed strengths, and by adjusting appropriations accordingly.

Choice of this alternative is consistent with the judgment that grade growth since fiscal year 1975 has been caused primarily by overgrading rather than by justifiable changes in force composition or other factors. Table 24 shows that savings to DoD under this alternative would equal only \$20 million in fiscal year 1978 but would total \$200 million over the five fiscal year period 1978-1982. Savings to the entire federal government (including DoD) would amount to \$45 million in fiscal year 1978 and would total \$475 million over the five-year period 1978-1982. 16/

This alternative has important effects other than on average grade and costs. Cutting back on grade mix makes it more difficult to staff some new groups, even if they are legitimately needed. However, since the restraints in this

16/ Costs in this and all other alternatives assume that grade cuts are achieved by delaying promotions. If billets are downgraded, but promotions are not delayed, then save-pay clauses will reduce savings.

alternative are levied only on organizations as a whole (e.g., all of DoD), managers have considerable flexibility to accommodate new, high-priority functions by reducing grades in other functions. Cutting back on grade mix also affects promotions. In fiscal year 1978, promotions for those in higher grades (9 and above) are significantly below the current policy promotion level, while promotions to lower grades will be above the current policy level. Rough estimates suggest that promotions to grade 9 in DoD equal 40 percent of their current policy level in 1978. ^{17/} Reductions are successively less in higher grades, and grade 15 promotions are essentially unchanged. In fiscal years beyond 1978, promotions return to roughly their current policy level. CBO has not estimated promotion effects in agencies other than DoD, but they should follow a similar pattern.

Reduce Average Grade 0.1 Per Year. The Congress may desire a sharp reduction in General Schedule grade. To illustrate such a reduction, this alternative reduces the average grade in DoD and other federal agencies by 0.1 in each fiscal year 1978-1982. The rate of reduction is the largest one consistent with a low level of promotions in grade 9. Under this alternative, the average grade in DoD and other agencies approximates its 1964 level by fiscal year 1982.

The Congress can implement this alternative in either of two ways. The Congress can require grade reductions and make appropriate budget cuts without establishing grade ceilings in law. This leaves the agencies considerable freedom to adjust to a major cutback; it also makes it difficult to insure that desired grade reductions are achieved.

^{17/} These estimates, and promotion estimates cited later in this section, are based on loss rates by grade provided informally by DoD. The estimates assume no attempt is made to increase losses (e.g., by offering early retirement); any such loss management could significantly improve the promotion picture though at some cost to the government. The estimates assume the total size of the force is as in the current policy alternative. Note that promotions of DoD employees will be even less than the estimates suggest to the extent persons from outside DoD are hired to fill vacancies.

Alternatively, the Congress can legislate specific grade ceilings consistent with the desired reduction in average grade and dollars. Of course, there are numerous ceilings that achieve a 0.1 annual reduction. One example underlies costs in Table 24 and is available from CBO. In this example, CBO assumed that cuts are taken so that the grade mix eventually returns to its 1964 pattern.

Choice of this alternative is consistent with the judgment that most or all grade growth since fiscal year 1964 has been caused by misclassifications or creation of unneeded positions, or that the overall competitiveness of the federal government for General Schedule employees can be allowed to decline.

Savings are substantial. Table 24 shows that DoD alone saves \$65 million in fiscal year 1978 and a total of \$1.8 billion in fiscal years 1978-1982. The federal government as a whole (including DoD) saves \$160 million in fiscal year 1978 and a total of \$4.8 billion over fiscal years 1978-1982.

In fiscal year 1978, this alternative would reduce promotions considerably more than the previous alternative. Promotions to grade 9 in fiscal year 1978 equal only 10 to 15 percent of the current policy level, and the promotion reductions continue through fiscal year 1982. This large, prolonged reduction in promotions could result in loss of many high quality employees.

SUMMARY

The alternatives suggest that the government's civilian payroll, including DoD's, can be reduced while still maintaining comparable pay and the ability to compete for needed civilians. The table below summarizes savings to

DoD under the various alternatives. Savings are in constant 1977 dollars to facilitate comparison with savings cited elsewhere in the text. 18/

TABLE 25.	SAVINGS RELATIVE TO CURRENT POLICY (Millions of fiscal year 1977 dollars)			
	<u>1978</u>	<u>1979</u>	<u>1982</u>	<u>1985</u>
Wage Board Pay Reform	-100	-250	-510	-510
Splitting General Schedule and Base Clerical/Technical on Local Data	-40	-40	-40	-40
General Schedule Grade Growth				
Return to fiscal year 1975 level	-20	-40	-40	-40
Reduce average grade by 0.1 per year	-60	-180	-530	-530

18/ Savings deflated using wage increases from October 1976 economic assumptions.

Projecting the supply of military enlistees for fiscal years 1977 through 1985 involves three distinct sets of data:

- o An economic forecast that provides estimates of gross national product (GNP), the consumer price index (CPI), the rate of unemployment, and an index of total compensation per man-hour for the private sector.
- o Projection of the critical variables affecting military enlistments: military pay raises, blue-collar civilian earnings, youth unemployment rates, and the annual number of male high school graduates.
- o Projection of male enlistees without prior service who hold high school diplomas and score on tests in mental categories I-III. This projection is based on a forecasting equation that includes the critical variables listed above.

The following sections discuss, in turn, each phase of the enlistment forecasts, including a comparison of the supply of enlistments with the services' manpower requirements.

Economic Projection: 1977-1985

Two basic long-term economic projections are used in forecasting enlistments: (1) the CBO forecast made in October 1976, which shows rapid recovery from the recession and indicates the unemployment rate will fall to 4 percent by the end of 1982; and (2) the CBO forecast made in January 1977, which shows only gradual recovery from the recession; after 1982, the unemployment rate falls to 4.6 percent. These two forecasts represent upper and lower bounds on the path of the economy during the next two years. The October 1976

projection indicates a reduction in total unemployment that may be unattainable. The January 1977 projection, based in part on the downward trends of recent economic indicators, is more pessimistic. However, it assumes that no fiscal stimulus (tax cuts or added government spending) is applied to the economy, and thus may be a conservative estimate of the progress of the economy.

The basic economic indicators appear in Tables A-1 and A-2. The January forecast is extended to fiscal year 1985, but the October forecast ends with fiscal year 1982. However, the unemployment rate, plus federal and private annual pay increases, are assumed to remain unchanged beyond 1982.

Because both projections show very low unemployment rates in the 1980s, the enlistment forecasts considered a third path. This path, based on the January projections through fiscal year 1980, has unemployment rising from 6.3 percent in fiscal year 1980 to 7.5 percent in fiscal year 1983 and beyond. This permits enlistment forecasts for the 1980s based, in at least one case, on assumptions that substantial unemployment prevails.

Population, Pay and Unemployment: 1977-1985

Although studies have identified a number of variables that may influence enlistments, these projections emphasize four in particular:

(1) The number of male youths receiving high school diplomas each fiscal year. These numbers are projected through fiscal year 1985 by the Department of Health, Education, and Welfare. ^{1/} This is a natural variable because the projection is restricted to high school graduate enlistments and because most enlistees have only recently graduated from high school. Enlistments in any fiscal year are related to high school

^{1/} See, e.g., Projections of Education Statistics to 1984-85, Department of Health, Education, and Welfare, NCGS 76-210 (Government Printing Office: 1976).

TABLE A-1. OCTOBER 1976 ECONOMIC PROJECTIONS: CONGRESSIONAL BUDGET OFFICE

Year Ending September 30	Real GNP Growth <u>a/</u>	Growth in Compensa- tion per Man-Hour <u>b/</u>	Consumer Price Increases	Growth in Earnings: Manufacturing	Federal Pay Raises	Unemploy- ment Rate: Males
1977	5.5%	6.9%	5.0%	6.7%	4.8%	7.0%
1978	5.6	6.6	4.8	5.7	5.5	6.1
1979	5.5	6.9	4.7	5.6	5.3	5.5
1980	5.4	7.4	5.0	5.9	5.4	4.9
1981	4.8	7.7	5.3	6.2	5.8	4.5
1982	4.5	8.2	5.7	6.7	6.2	4.2
1983	-	8.2	5.6	6.9	6.8	4.0
1984	-	8.2	5.6	6.9	6.8	4.0
1985	-	8.2	5.6	6.9	6.8	4.0

a/ GNP not projected past 1982.

b/ March-to-March increases.

TABLE A-2. JANUARY 1977 ECONOMIC PROJECTIONS: CONGRESSIONAL BUDGET OFFICE

Year Ending September 30	Real GNP Growth	Growth in Compensa- tion per Man-Hour <u>a/</u>	Consumer Price Increases	Growth in Earnings: Manufacturing	Federal Pay Raises	Unemploy- ment Rate: Males
1977	4.4%	7.5%	4.9%	6.9%	4.8%	7.8%
1978	4.3	7.7	5.1	6.3	6.0	7.3
1979	4.4	6.9	5.0	6.1	6.2	7.0
1980	5.1	6.7	4.8	5.7	5.5	6.3
1981	5.1	6.7	4.6	5.5	5.3	5.7
1982	5.1	7.0	4.8	5.6	5.2	5.1
1983	4.5	7.6	5.1	5.9	5.5	4.6
1984	3.5	7.8	5.4	6.2	6.0	4.6
1985	3.5	8.0	5.6	6.6	6.2	4.6

a/ March-to-March increases.

diplomas awarded in the current and the preceding fiscal years.

(2) The annual federal pay increase. Pay for first-term military personnel is tied to salaries paid to General Schedule civilian employees. Military and General Schedule personnel tend to receive the same pay increases under law, and these pay increases are related to the annual survey of professional, administrative, technical, and clerical (PATC) workers performed annually in March. To project this pay increase, the following equation was used:

$$Y = -.92 + .77 X$$

where Y = the annual percentage increases in federal pay adjusted for changes in the CPI;

and X = the March-to-March change in an index of compensation per man-hour for the private sector, also adjusted by the CPI.

This equation was derived from a time-series regression of the annual PATC survey increase on the variable X for 1962 through 1976.

(3) Wage rates for workers in the private sector. This variable, designed to catch trends in wage rates available to enlistees in the private sector, is defined as average hourly earnings in manufacturing (excluding overtime)--a broad-based index of wages available to blue-collar workers. The equation predicting annual percent increase in these earnings is

$$Z = -.32 + .61 X$$

where X is defined as above. Pay for manufacturing workers has historically grown faster than increases reported in the PATC survey. Thus, in the projection for this report, military pay declines relative to civilian pay.

A legitimate question exists on the appropriateness of using earnings in manufacturing to calculate the wage rates available to potential military enlistees. Many youths enter service industries where wage growth may

lag behind increases in the manufacturing sector. This would put trends in federal pay in a more favorable light. However, many service workers eventually make careers in the manufacturing sector, and youths considering military service may be more influenced by wage rates in career-type jobs than in temporary jobs.

(4) Youth unemployment rates. These rates are measured by the unemployment rates for males aged 18-19 years. This rate (U) is related to the total unemployment rate (RU) by

$$U = 1.54 + 2.21 \text{ RU}.$$

The time-series regression producing this equation used a first-order autoregressive scheme with an estimated serial correlation of +0.73.

Other studies of youth unemployment have found other variables affecting these unemployment rates, such as the relative size of youth and adult populations, the proportion of youth in military service, and the minimum wage. In fact, by fiscal year 1985, the youth population declines relative to the adult population. This may mean that if total unemployment rates approach the full employment rate of 4 percent, then youth unemployment rates may fall even faster.

The annual trends in these variables from fiscal years 1977 to 1985 are shown in Table A-3 for each of the economic projections used to forecast enlistments. Federal pay raises and blue-collar wages are combined in one variable that represents the ratio of an index of military pay to an index of average hourly earnings in manufacturing. The high school graduate projections are assumed to apply to all three economic projections.

As discussed in the text, military enlistments are affected by recruiters, advertising, enlistment bonuses, and probably other factors under the control of the military services. This analysis has assumed that recruiters and other resources available to the services remain constant at fiscal year 1976 levels. Hence increased recruiting budgets in real terms would have some effect on enlistments. Factors such as attitudes towards military service and other variables omitted from this analysis are assumed to remain unchanged.

TABLE A-3. PROJECTED ANNUAL CHANGES: POPULATION, PAY AND UNEMPLOYMENT.
FISCAL YEARS 1977-1985.

Year End- ing Sep- tember 30	Growth in High School Graduates a/ All Cases	Changes in Relative Pay b/			Unemployment Rates, c/ Males 18-19		
		October 1976	January 1977	High Unem- ploy- ment	October 1976	January 1977	High Unem- ploy- ment
1976	--	-3.7	-3.7	-3.7	17.8	17.8	17.8
1977	+1.0	-1.7	-1.9	-1.9	16.9	17.8	17.8
1978	0	-0.5	-0.8	-0.8	14.9	17.2	17.2
1979	+0.1	-0.2	0	0	13.6	16.5	16.5
1980	0	-0.5	+0.1	+0.1	12.4	15.3	15.3
1981	-1.0	-0.6	-0.1	-0.1	11.5	13.9	15.7
1982	-1.5	-0.6	-0.3	-0.3	10.7	12.7	16.9
1983	-2.3	-0.4	-0.5	-0.5	10.4	11.5	18.0
1984	-3.5	-0.1	-0.4	-0.4	10.4	11.4	18.1
1985	-3.7	-0.2	-0.5	-0.5	10.4	11.4	18.1

a/ Percent change in sum of male high school diplomas, current and preceding school years. Source: Department of Health, Education, and Welfare.

b/ Percent change in index of ratio of military pay to civilian pay (average hourly earnings in manufacturing).

c/ Estimated unemployment rates.

Enlistment Forecasts: 1977-1985

Enlistments for fiscal years 1977-1985 are taken from an equation that can be written either

$$E = E_0 (H)^a (P)^b (U)^c$$

or

$$\log_e E = \log_e E_0 + a \log_e H + b \log_e P + c \log_e U$$

where E = enlistments for male high school graduates in mental categories I-III for the forecast year;

E_0 = same enlistments for the year ending 30 September 1976;

H = population of high school graduates where 1976 equals 1.00;

P = index of military pay relative to average hourly earnings of high school graduates (1976 equals 1.00);

U = unemployment rate for males 18-19 years old (1976 equals 1.00);

a, b, c = elasticities for population, pay and unemployment; and

\log_e = logarithm to the base e (= 2.71...).

This represents a multiplicative or "constant elasticity" supply equation. In the forecasts reported in this paper, $a = 1.0$, $b = 1.0$, and $c = 0.45$. The values of b and c, associated with pay and unemployment, are taken from a study of actual enlistment behavior done for the Defense Manpower Commission. These assumptions were also used and discussed in a previous CBO Background Paper. ^{2/} For instance, by assuming $b = 1.0$, a 1 percent change in military pay relative to civilian wage rates produces a 1 percent change in enlistments of high school graduates. It takes a 2.2 percent change in youth unemployment to produce a 1 percent change in enlistments. With $a = 1.0$, high school graduate

^{2/} See Defense Manpower Compensation Issues for Fiscal Year 1977, Congressional Budget Office, Background Paper No. 6, April 1976; and David W. Grissmer, "The Supply of Enlisted Volunteers in the Post-Draft Environment (An Analysis Based on Monthly Data, 1970-1975)," General Research Corporation, in Defense Manpower Commission Staff Studies, Volume III (Government Printing Office: May 1976).

enlistments are directly proportional to the number of high school graduates in the two previous school years.

Alternative assumptions were also investigated and produced different results, although projections differed at most by 5 to 10 percent. A range of estimates for pay and unemployment effects are used in projecting enlistments. In particular, four sets of pay and unemployment elasticities are used:

	<u>Pay</u>	<u>Unemployment</u>
A	1.0	0.45
B	1.25	0.45
C	1.0	0.25
D	0.75	0.25

Assumption A is used in the paper and is felt to be the best estimate of these parameters. Employment elasticities are different from unemployment elasticities--and usually much larger. For instance, under assumption A, at an unemployment rate of 20 percent, the employment elasticity is -1.8, indicating that a 1 percent increase in jobs yields nearly a 2 percent decrease in enlistments, almost twice as large as the effect of a similar increase in civilian wages. Under the lower unemployment elasticity of 0.25, increased employment and higher civilian pay would have the same effect on enlistments. Alternative pay elasticities of 1.25 and 0.75 were also considered in assumptions B and D. The 1.25 elasticity was the estimate used by the Gates Commission 3/ in 1970 to find the pay raise necessary to recruit an all-volunteer military. The estimate of 0.75 is a more conservative estimate and should provide a lower bound for estimating pay effects.

The total supply of military enlistees for the Department of Defense is shown in Table A-4 for 1977 to 1985 under each of the three economic assumptions.

3/ The Report of the President's Commission on an All-Volunteer Armed Force (Gates Commission), The Macmillan Co., 1970, p. 180.

Table A-4 also contains the services' objectives for male high school graduate enlistments in mental categories I-III. Total DoD demand and supply are more meaningful figures than individual service totals because of the problem of interservice competition for recruits. Enlistment trends for 1977 to 1985 are discussed in the text along with a comparison of demand and supply over the next eight years.

TABLE A-4. DEMAND AND SUPPLY OF MALE HIGH SCHOOL GRADUATE ENLISTEES, FISCAL YEARS 1977-1985, TOTAL DEPARTMENT OF DEFENSE (in thousands)

Year Ending September 30	Demand	Supply		
	Service Objectives	October 1976 Projection	January 1977 Projection	High Unemployment Projection
1976	225	225	225	225
1977	236	215	220	220
1978	236	203	215	215
1979	240	194	211	211
1980	247	183	202	202
1981	241	173	191	202
1982	238	163	178	203
1983	240	155	164	200
1984	240	149	156	192
1985	240	145	152	187

A final table (A-5) gives a breakdown of enlistment requirements and quality objectives for each of the services from 1977 to 1982 and extended out to 1985.

TABLE A-5. OBJECTIVES FOR MALE NON-PRIOR-SERVICE ENLISTEES (in thousands)

Year Ending September 30	Army		Navy		Marine Corps		Air Force	
	Total	HSDG <u>a/</u> Cat. I-III	Total	HSDG <u>b/</u> Cat. I-III	Total	HSDG <u>c/</u> Cat. I-III	Total	HSDG <u>d/</u> Cat. I-III
1976	171	78	90	63	48	29	64	56
1977	169	76	104	73	48	26	67	60
1978	165	83	90	63	44	29	68	61
1979	169	81	94	66	46	30	71	64
1980	173	81	101	71	47	30	73	65
1981	172	81	100	70	45	31	67	60
1982	168	81	91	63	45	31	70	63
1983 <u>e/</u>	171	81	96	67	45	29	70	63
1984	171	81	96	67	45	29	70	63
1985	171	81	96	67	45	29	70	63

a/ Army long-term objective is 68 percent high school graduates. These figures are based on a recent COMPLIP run, and include 55 to 60 percent high school graduates and 10 percent in category IV.

b/ Navy objective is 76 percent high school graduates with a maximum of 6 percent in mental category IV.

c/ Marine Corps objective is 75 percent high school graduates and a maximum of 10 percent in mental category IV.

d/ Air Force has no official objective. Figures are based on recent recruiting experience of 90 percent high school graduates with less than 1 percent in mental category IV.

e/ Recruiting data for 1983 through 1985 represent average experience for 1979 through 1982.



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